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SERVING THE INDUSTRY SINCE 1859

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The P&GJ 500

Details On The 500 Leading Companies Transporting Energy Through Pipelines

PIPELINE & GAS JOURNAL

International Pipeline & Gas Utility Design, Construction & Operation

Published Continuously Since 1859

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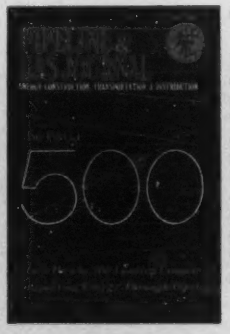

COVER

P&GJ presentation editor James Duke, an artist and illustrator who likes for his work to convey a message as well as inform his audience, worked long and diligently to produce this month's P&GJ 500 striking cover; for more details on this elite group, see page 19.

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Operating costs have been reduced and valuable data produced by Greater Winnipeg Gas Company using a digital control system; system was recently given severe test by one of Winnipeg's coldest winters.

The 3rd P&GJ 500

Dimensions Of The 500 Leading Companies Transporting Energy Through Pipelines

by **Dean Hale**, *Editor;* **Jim Watts**, *Assistant Editor; and* **Denise Luttrall**, *Editorial Assistant*

Decreased energy demand, lessened economic activity, increases in energy prices, and continuing changes in energy flow patterns had noticeable effects on the nation's 500 leading firms that move hydrocarbon energy through pipelines. Results of 1982 activities are evident in data provided by the firms for the P&GJ 500 Report.

The third (1983) edition of the P&GJ 500 Report gives a definitive reading on the dimensions of the nation's energy pipeline network—covering some 2300 owner/operator entities and nearly 1,500,000 miles of gas transmission and gathering pipelines, liquids pipelines, and gas mains and services.

Included in the Third P&GJ 500 Report are the 300 leading gas distribution utilities, the 100 leading gas transmission and gathering pipeline systems (both interstate and intrastate), and the 100 leading liquids (crude oil and refined products) pipelines. These firms represent the industry's leaders—they serve 96.3% of the nation's gas utility customers, operate 88.5% of the nation's gas pipeline mileage, and operate 73.7% of the nation's liquids pipelines.

The P&GJ 500 Report provides details on revenues, gas sales (in MMcf per year), number of customers, net income, plant value, capital expenditures in terms of plant additions, and physical facilities in terms of miles of gas mains and services or miles of pipelines, as well as barrels of product delivered by liquids lines.

Gas Distribution Utilities. The leading 300 gas distribution utilities range in size from 3,896,369 customers to 3564 customers. The top 300 operate 84.3% of the nation's gas mains and 96.1% of its gas service lines, in terms of mileage. The top 10 gas utilities alone serve 35.6% of all of the nation's gas customers, and operate 25.7% of the total miles of mains and 32.4% of the total miles of service lines. For the third year, the two largest utilities were in California—Southern California Gas Co. and Pacific Gas & Electric Co. In the top 10 utilities, gas sales in 1982 were down 7.46%, while revenues increased 11% (up $2,077,000). Gas main mileage for the top 10 increased only 124 miles.

Gas Transmission Pipelines. The top 10 gas transmission pipeline companies (see tables) reported an increase of 15.2% in revenues ($4.430 billion) while gas sales declined 6.96% (689,984 MMcf) for the year. Additions to plan in 1982 by the top 10 were down 5.3% ($102 million). In 1982, El Paso Natural Gas Co. again ranked first in revenues, but fell to fifth in gas sales, sixth in plant additions, and second in total mileage. Tennessee Gas Pipe Line Co. ranked second in revenues and first in gas sales, fourth in plant additions, and fourth in total mileage. Columbia Gas Transmission Co. ranked third in revenues, seventh in gas sales, third in plant additions, and third in total mileage. Transcontinental Gas Pipe Line Corp. was fourth in revenues, sixth in gas sales, first in plant additions, and tenth in total mileage.

Liquids Pipelines. Revenues for liquids pipelines were up again in 1982 even though the total barrels of products and crude oil handled declined. The top 10 liquids pipeline companies registered a 5.3% increase in revenues, while the total deliveries of the top 10 crude oil pipelines declined 7% and deliveries of refined products by the top 10 products pipeline companies declined 3.6%. Plant additions by all liquids pipelines were down 42% for the year (compared to 1981 plant additions, when several major systems were completed).

The following summary tables provide an overview of the "top 10" companies in numerous categories; the complete tabular presentation gives a more complete dimensional measure of the P&GJ 500 companies in the three categories.

The 10 Biggest Spenders— Gas Distribution Utilities (not including integrated companies)

Rank 82	Rank 83	Company Name	1982 Additions To Plant, $(000)
1	1	Southern California Gas Co.	156,998
–	2	Columbia Gas Distribution Co's	100,000
5	3	Public Service Electric & Gas Co.	77,378
–	4	South Carolina Electric & Gas Co.	71,947
4	5	Northern Illinois Gas Co.	67,794
2	6	Consolidated Gas Distribution Co's	59,004
7	7	Brooklyn Union Gas Co.	55,048
3	8	Washington Gas Light Co.	54,801
–	9	Kansas Nebraska Natural Gas Co. Inc.	52,279
8	10	Peoples Gas Light & Coke Co.	52,050

The 10 Biggest Spenders— Gas Transmission Pipelines (not including integrated companies)

Rank 82	Rank 83	Company Name	1982 Additions To Plant, $(000)
–	1	Transcontinental Gas Pipe Line Corp.	278,719
2	2	Michigan Wisconsin Pipeline Co.	255,161
1	3	Columbia Gas Transmission Co.	216,271
3	4	Tennessee Gas Pipeline Co.	193,495
6	5	Texas Eastern Transmission Corp.	180,238
7	6	El Paso Natural Gas Co.	163,772
–	7	Texas Oil and Gas Corp.	150,361
5	8	Northern Natural Gas Co.	143,659
–	9	Natural Gas Pipeline Co. of America	127,557
9	10	Southern Natural Gas Co.	114,559

The 10 Biggest Spenders— Liquids Pipeline Companies

Rank 82	Rank 83	Company Name	1982 Additions To Plant, $(000)
5	1	Four Corners Pipe Line Co.	32,468
–	2	Ohio River Pipe Line Co.	24,630
8	3	Kaneb Pipe Line Co.	23,527
–	4	Loop Inc.*	21,704
2	5	MAPCO, Inc.	21,046
–	6	Chevron Pipe Line	19,662
9	7	Arco Pipe Line Co.	19,090
–	8	Williams Pipe Line	17,183
10	9	Sohio Pipe Line Co.	16,932
6	10	Exxon Pipeline Co.	13,437

*Operations began January 1, 1982.

The P&GJ 500 ... dimensions of the pipeline energy business

The Top 10 In Revenues— Gas Distribution Utilities

Rank 82	Rank 83	Company Name	1982 Revenues $(000)
2	1	Southern California Gas Co.	4,304,068
1	2	Public Service Electric & Gas Co.	3,873,976
4	3	Pacific Gas & Electric Co.	3,607,404
3	4	Columbia Gas Distribution Co.'s	2,788,784
5	5	Lone Star Gas Co. Div of Enserch	2,151,374
6	6	Northern Illinois Gas Co.	1,815,530
7	7	Consolidated Gas Distribution Co.'s	1,667,859
8	8	Michigan Consolidated Gas Co.	1,638,666
—	9	San Diego Gas & Electric Co.	1,430,948
10	10	Peoples Gas Light & Coke Co.	1,401,011

The Top 10 Gas Distribution Utilities In Miles of Mains

Rank 82	Rank 83	Company Name	Miles of Mains
1	1	Southern California Gas Co.	35,309
3	2	Columbia Gas Distribution Co.'s	30,039
2	3	Pacific Gas & Electric Co.	29,955
4	4	Northern Illinois Gas Co.	23,646
5	5	Entex Inc.	21,920
6	6	Consolidated Gas Distribution Co.'s	20,526
—	7	Lone Star Gas Co.	19,710
7	8	Consumers Power Co.	19,467
—	9	National Fuel Gas Distribution Corp.	18,021
8	10	Atlanta Gas Light Co.	17,830

The Top 10 In Revenues— Gas Transmission Pipelines

Rank 82	Rank 83	Company Name	1982 Revenues $(000)
1	1	El Paso Natural Gas Co.	4,054,407
4	2	Tennessee Gas Pipe Line Co.	3,947,222
2	3	Columbia Gas Transmission Co.	3,856,735
3	4	Transcontinental Gas Pipe Line Corp.	3,652,623
6	5	Pacific Gas & Electric Co.	3,607,423
5	6	United Gas Pipe Line Co.	3,436,000
8	7	Texas Eastern Transmission Corp.	3,146,927
7	8	Natural Gas Pipeline Co. of America	2,938,324
9	9	Michigan Wisconsin Pipeline Co.	2,455,008
—	10	Northern Natural Gas Co.	2,436,213

The Top 10 Gas Distribution Utilities In MMcf Gas Sales

Rank 82	Rank 83	Company Name	1982 Sales, MMcf
2	1	Southern California Gas Co.	879,974
3	2	Pacific Gas & Electric Co.	722,814
1	3	Columbia Gas Distribution Co.'s	548,594
4	4	Lone Star Gas Co.	495,015
5	5	Northern Illinois Gas Co.	460,864
6	6	Consolidated Gas Distribution Co.'s	427,655
7	7	Michigan Consolidated Gas Co.	340,424
9	8	Arkla Inc.	301,748
10	9	Peoples Gas Light & Coke Co.	292,494
8	10	Consumers Power Co.	291,796

The Top 10 Gas Transmission Pipelines In MMcf Gas Sales

Rank 82	Rank 83	Company Name	1982 Sales, MMcf
2	1	Tennessee Gas Pipeline Co.	1,034,546
6	2	Natural Gas Pipeline Co. of America	1,030,673
4	3	United Gas Pipe Line Co.	1,029,592
5	4	Houston Natural Gas Corp.	1,025,051
1	5	El Paso Natural Gas Co.	1,018,510
8	6	Transcontinental Gas Pipe Line Corp.	936,267
3	7	Columbia Gas Transmission Co.	932,768
7	8	Texas Eastern Transmission Corp.	884,663
9	9	Pacific Gas & Electric Co.	683,682
10	10	Northern Natural Gas Co.	652,218

The Top 10 Gas & Electric Utilities— by Gas Customers

Rank 82	Rank 83	Company Name	No. of Customers	1982 MMcf Sales	Miles of Mains
1	1	Pacific Gas & Electric Co.	2,914,970	722,814	29,955
2	2	Public Service Electric & Gas Co.	1,319,745	200,455	12,625
3	3	Consumers Power Co.	1,168,058	291,796	19,467
4	4	Consolidated Edison Co. of N.Y.	1,016,146	98,551	4,191
5	5	Public Service Co. of Colo.	694,780	156,997	10,854
6	6	Northern Indiana Public Serv. Co.	528,883	246,367	9,436
7	7	San Diego Gas & Electric Co.	520,136	45,740	5,127
8	8	Baltimore Gas & Electric Co.	513,006	96,790	4,257
9	9	Niagara Mohawk Power Co.	428,453	109,693	5,968
10	10	Long Island Lighting Co.	397,930	49,576	5,878

The 10 Largest Integrated Gas Utilities

Rank 82	Rank 83	Name of Company	No. of Customers	MMcf Sales	Miles of Mains	Miles of Trans. Lines	Additions to Plant $(000), 1982
1	1	Pacific Gas & Electric Co.	2,914,970	722,814	29,955	4,833	91,106
2	2	Lone Star Gas Co., Div. of Enserch	1,195,703	495,015	19,710	10,767	63,026
3	3	Consumers Power Co.	1,168,058	291,796	19,467	1,959	71,578
4	4	Michigan Consolidated Gas Co.	1,045,518	340,424	12,795	2,347	56,976
5	5	Arkla, Inc.	712,726	301,748	14,914	9,194	85,800
6	6	National Fuel Gas Dist. Corp.	671,023	205,965	18,021	1,464	68,456
7	7	Oklahoma Natural Gas Co. (ONEOK, Inc.)	617,660	264,913	10,500	4,751	41,196
8	8	Mountain Fuel Supply Co.	414,624	116,973	8,878	1,971	117,917
9	9	Southwest Gas Corp.	353,865	78,279	6,844	1,683	8,811
10	10	Pioneer Corp. (Energas, Westar)	284,941	195,300	4,262	4,218	41,915

The P&GJ 500 ... dimensions of the pipeline energy business

The Top Liquids Pipeline Companies—In Mileage

Rank 82	Rank 83	Company Name	Total Miles Of Pipeline
1	1	Amoco Pipeline Co.	12,190
2	2	Mobil Pipe Line Co.	11,809
3	3	Exxon Pipeline Co.	9,116
4	4	Arco Pipe Line Co.	8,248
5	5	Williams Pipe Line Co.	8,107
7	6	MAPCO, Inc.	8,025
8	7	Continental Pipeline Co.	7,330
6	8	Shell Pipe Line Co.	7,068
9	9	Phillips Pipe Line Co.	6,655
10	10	Colonial Pipeline Co.	5,250

The Top 10 Crude Pipelines

Rank 82	Rank 83	Company Name	1982 Deliveries (000) Bbl Crude
1	1	Arco Pipe Line Co.	523,685
2	2	Exxon Pipeline Co.	447,573
3	3	Lakehead Pipe Line Co.	387,267
4	4	Shell Pipe Line Co.	378,487
5	5	Amoco Pipeline Co.	304,879
8	6	Sohio Pipe Line Co.	293,477
9	7	Gulf Pipeline Co.	258,698
10	8	Mobil Pipe Line Co.	253,457
7	9	Texas Pipe Line Co.	209,261
—	10	Continental Pipe Line Co.	166,692

The Top 10 Products Pipeline Companies

Rank 82	Rank 83	Company Name	1982 Deliveries (000) Bbl Products
1	1	Colonial Pipeline Co.	625,922
3	2	Buckeye Pipe Line Co.	256,704
4	3	Southern Pacific Pipe Line Co.	230,450
5	4	Gulf Pipeline Co.	207,915
9	5	Phillips Pipe Line Co.	176,894
8	6	Williams Pipe Line Co.	164,072
7	7	Plantation Pipeline Co.	155,982
—	8	Shell Pipe Line Co.	148,844
—	9	Arco Pipe Line Co.	138,687
—	10	Texas Eastern Products Pipeline Co.	137,141

The Top 10 Liquids Pipelines—Revenues

Rank 82	Rank 83	Company Name	1982 Revenues $(000)
1	1	Sohio Pipe Line Co.	1,204,846
2	2	Arco Pipe Line Co.	873,120
3	3	Exxon Pipeline Co.	820,590
4	4	BP Pipeline Inc.	576,974
5	5	Colonial Pipeline Co.	479,759
6	6	Amoco Pipeline Co.	174,507
—	7	Lakehead Pipe Line Co.	158,835
8	8	Mobil Pipe Line Co.	153,121
7	9	Mobil Alaska Pipeline Co.	152,021
10	10	Shell Pipe Line Co.	148,030

The 300 Leading Gas Distribution Utilities

Rank 82	Rank 83	Name of Company	Number Of Customers	1982 Gas Sales, MMcf	1982 Oper. Revenues $(000)	1982 Net Income $(000)	Gas Plant Value $(000) 12-31-82	Additions To Plant $(000)	Miles of Mains	Mile of Services
1	1	Southern California Gas Co.	3,896,369	879,974	4,304,068	71,465	1,237,015	156,998	35,309	36,676
2	2	Pacific Gas & Electric Co.	2,914,970	722,814	3,607,424	810,178[B]	1,491,417	91,106	29,955	23,797
3	3	Columbia Gas Distribution Co.'s[P]	1,900,004	548,594	2,788,784	40,000[E]	700,000[E]	100,000[E]	30,039	21,590[E]
4	4	Consolidated Gas Distribution Co.'s[Q]	1,487,330	427,655	1,667,859[R]	47,377[R]	841,123	59,004	20,526[A]	20,012[A]
5	5	Northern Illinois Gas Co.	1,455,456	460,864	1,815,530	80,726	1,664,802	67,794	23,646	19,241
6	6	Public Service Electric & Gas Co.	1,319,745	200,455	1,330,785	342,827[B]	1,132,500	77,378	12,625	12,476
7	7	Entex Inc.[C]	1,220,919	197,888	1,194,423	47,657	499,420	39,207	21,920	12,764
8	8	Lone Star Gas Co.	1,195,703	495,015	2,151,374	34,972	840,121	63,026	19,710	11,387[E]
9	9	Consumers Power Co.	1,168,058	291,796	1,222,129	76,427	1,275,830	33,467	19,467	11,019[E]
10	10	Brooklyn Union Gas Co.[F]	1,064,539	107,353	850,933	39,980	721,778	55,048	3,825	5,237
11	11	Michigan Consolidated Gas Co.	1,045,518	340,424	1,638,666	20,793	831,003	56,976	12,795	9,244[E]
12	12	Consolidated Edison Co. of N.Y. Inc.	1,016,146	98,551	600,000[E]	492,551	562,056	48,098	4,191	2,594
13	13	The Peoples Gas Light & Coke Co.[F]	871,295	292,494	1,401,011	39,915	709,332	52,050	4,013	5,123
15	14	Atlanta Gas Light Co.[F]	849,415	225,254	965,496	10,549	578,750	46,771	17,830	15,045
14	15	The Gas Service Co.	849,395	187,844	811,991	5,062	402,541[G]	24,899	13,037	5,561

A. 1981 Data
B. Electric and gas combined
C. FY ended 6-30-82
D. Steam and gas combined
E. Estimated
F. FY ended 9-30-82
G. Gross value
H. Gas, steam, and electric combined
I. FY ended 8-31-82
J. Includes gas and oil producing properties
K. FY ended 10-31-82
L. FY ended 3-31-82
M. FY ended 5-31-82
N. Combined corporate information
O. Does not include propane customers
P. Eight utility companies included
Q. Four utility companies included
R. Does not include Hope Natural Gas Co.
S. United Cities Gas Co. & Gas Light Co. of Columbus (Ga) merged in 1982
T. Gas and water combined
U. FY ended 7-31-82

The P&GJ 500... dimensions of the pipeline energy business

Rank 82	Rank 83	Name of Company	Number Of Customers	1982 Gas Sales, MMcf	1982 Oper Revenues $000	1982 Net Income $000	Gas Plant Value $000 12-31-82	Additions To Plant $000	Miles of Mains	Mile of Services
16	16	Arkla Inc.	712,726	301,748	1,043,800[J]	95,380	1,231,946	85,800	14,914	7,477[E]
17	17	Public Service Co. of Colorado	694,780	156,997	618,814[B]	116,076[H]	342,280	21,119	10,854	6,554[E]
18	18	National Fuel Gas Distr. Corp.[F]	671,023	205,965	997,549	92,579	848,432[G]	68,456	18,021	5,728[E]
19	19	Oklahoma Natural Gas Co.[I]	617,660	264,913	980,230	34,504	575,424	41,196	10,500	7,019
20	20	Minnegasco Inc.	571,466	152,005	692,588	20,099	376,943	24,841	8,003	5,391[E]
21	21	Washington Gas Light Co.	568,250	111,455	682,829	21,089	720,039	54,801	6,767	8,033
22	22	Laclede Gas Co.[F]	539,275	116,586	594,671	19,190	248,817	21,428	6,124	5,804
23	23	Philadelphia Gas Works[1]	531,927	78,517	510,616	32,052	399,562	10,809	2,983	4,986[E]
24	24	Northern Indiana Public Service	528,883	246,367	950,734	103,235[B]	3,232,296[G]	48,595	9,436	10,039
25	25	San Diego Gas & Electric Co.	520,136	45,740	1,430,948[B]	157,303	275,372	19,255	5,127	4,145
26	26	Baltimore Gas and Electric Co.	513,006	96,790	1,595,472[B]	174,805	361,047	15,137	4,257	4,324
27	27	Boston Gas Co.	480,157	83,655	561,001	11,168	325,425	11,264	5,665	4,196
28	28	Niagara Mohawk Power Corp.	428,453	109,693	533,122	268,534[B]	458,315	32,422	5,968	4,027
30	29	Mountain Fuel Supply Co.	414,624	116,973	516,340	55,019	431,238	45,467	8,878	4,876
29	30	Wisconsin Gas Co.	408,977	117,100	599,469	15,098	216,623	17,256	5,984	4,613
31	31	Long Island Lighting Co.	397,930	49,576	310,919	27,063	340,383	21,603	5,878	4,282[E]
32	32	Illinois Power Co.	382,097	100,697	1,106,775[B]	156,395[B]	357,106	16,651	7,198	5,156
36	33	Southern Union Gas Co.	354,113	49,792	250,501	19,634	131,857	14,889	6,222	2,563
34	34	Southwest Gas Corp.	353,865	78,279	399,116	3,042	223,927[G]	8,811	6,844	3,338[E]
33	35	Alabama Gas Corp.[F]	352,323	75,600	339,548	6,783	118,692	11,452	6,142	7,004
35	36	Arizona Public Service Co.	339,443	39,739	197,967	231,043	114,319[E]	8,831[E]	6,180	3,904
37	37	Indiana Gas Co. Inc.	305,018	90,110	336,335	9,304	232,732	29,897	6,221	4,512
38	38	The Cincinnati Gas & Electric Co.	301,226	81,442	1,165,108[B]	130,483	200,232	9,992	3,466	811
40	39	Peoples Natural Gas Div., InterNorth	299,589	129,881	515,965	11,240	144,426	15,139	9,859	3,337
39	40	Philadelphia Electric Co.	297,872	68,761	390,427	24,417	397,343	25,449	4,430	3,099
43	41	Northern States Power Co.	291,100	74,645	373,277	N/A	268,313	13,733	4,330	3,185
42	42	Gas Co. of New Mexico	290,312	72,978	338,952	4,707	195,778	16,919	6,296	1,396
41	43	Energas[N] (Pioneer Corp.)	284,728	76,076	257,572	N/A	44,479	7,475	10,708	5,393[E]
44	44	San Antonio City Public Service	271,393	27,764	139,618	80,477	153,178	7,766	3,439	3,021
45	45	Dayton Power & Light Co.	264,258	53,802	272,094	N/A	122,919	7,741	3,888	739
46	46	Equitable Gas Co.	259,594	65,820	342,598	33,648	442,011	25,888	3,349	2,449[E]
48	47	Washington Natural Gas Co.[F]	252,095	56,337	360,400	12,374	314,573	21,866	6,035	6,028
47	48	Northwest Natural Gas Co.	246,357	60,477	367,544	17,691	298,718	26,363	7,629	4,641
52	49	New Jersey Natural Gas Co.[F]	238,146	50,574	257,132	8,346	138,729	13,391	4,384	3,820
50	50	Louisiana Gas Service Co.[F]	233,871	20,186	101,524	391	68,253	7,663	3,696	2,302
49	51	Louisville Gas & Electric Co.	233,006	52,005	210,822	43,175[B]	94,846	855	850	2,841
51	52	Memphis Light, Gas & Water	231,032	61,319	244,732	7,236	160,295[G]	7,622	926	2,221
53	53	Rochester Gas & Electric Corp.	230,908	46,767	681,913	70,040	203,202	9,769	3,575	2,803
54	54	Iowa-Illinois Gas & Electric Co.	223,967	65,434	267,547	54,497[B]	183,334	4,607	3,635	2,612
55	55	Bay State Gas Co.	220,849	44,845	312,107	6,078	229,178	12,050	2,295[E]	2,083[E]
56	56	Wisconsin Natural Gas Co.	217,986	65,726	327,701	10,246	152,253	N/A	4,201	2,812[E]
58	57	Citizens Gas & Coke Utility	212,103	53,127	228,004	(8,931)	236,619	18,266	2,986	4,184
59	58	UGI Corp.	206,042	60,128	334,064	20,134	210,220	22,655	3,263	1,988
60	59	Mississippi Valley Gas Co.[F]	204,422	57,011	218,384	3,658	50,296	N/A	4,299	2,105[E]
62	60	Piedmont Natural Gas Co.[K]	201,151	64,592	315,774	7,372	230,496	10,865	5,334	1,898[E]

The P&GJ 500 ... dimensions of the pipeline energy business

Rank 82	Rank 83	Name of Company	Number Of Customers	1982 Gas Sales, MMcf	1982 Oper. Revenues $000	1982 Net Income $000	Gas Plant Value $000 12-31-82	Additions To Plant $000	Miles of Mains	Mile of Services
61	61	Commonwealth Gas Co.	200,046	39,803	246,249	1,161	138,781[G]	7,559	2,357	1,572
57	62	Kansas-Nebraska Natural Gas Co.	197,328	93,500	488,319	26,452	520,988	52,279	3,636	2,242[E]
62	63	Elizabethtown Gas Co.	194,959	39,755	252,873	9,450	107,816	9,953	2,134	4,656
69	64	South Carolina Electric & Gas Co.	186,309	45,718	266,389	7,324	252,077	71,947	5,770	4,033
64	65	Central Illinois Light Co.	183,871	46,361	480,508[B]	41,913	203,196	11,912	3,205	2,795
66	66	New Orleans Public Service Inc.	174,933	22,580	121,008	(1,180)	46,707	2,525	1,460	2,642
68	67	Montana-Dakota Utilities Co.	174,590	63,112	253,183	2,578	271,277[G]	24,487	3,293	2,612[E]
67	68	Peoples Gas System Inc. (Tampa)	169,208	37,395	166,179	5,397	146,101	8,877	4,200	2,612
72	69	Public Service of N.C. Inc.	155,447	41,863	211,793	7,000	130,674	15,428	3,566	1,766[E]
71	70	Wisconsin Public Service Corp.	153,140	47,515	584,477[B]	41,907	113,143[G]	6,996	2,774	2,046
70	71	Northeast Utilities	152,329	28,902	224,447	18,647	224,460	22	2,265	1,160[E]
64	72	Central Illinois Public Service Co.	150,328	33,255	138,369	66,344[B]	101,127	5,380	1,327	2,597
73	73	Western Kentucky Gas Co.	138,814	37,326	153,873	3,990	48,404	1,137	2,860	881
76	74	The Kansas Power & Light Co.	133,409	48,975	149,214	4,074	63,867	10,693	4,291	621
75	75	Iowa Power & Light Co.	133,294	31,677	142,245	5,919	102,719	12,557	2,204	2,024
80	76	South Jersey Gas Co.	131,936	38,799	218,499	6,178	120,977	15,822	3,393	2,358
77	77	The Southern Connecticut Gas Co.	131,825	20,277	131,085	6,897	125,950[G]	9,534	1,778	2,001
78	78	Iowa Electric Light & Power Co.	131,638	36,377	402,847[B]	27,412[B]	64,484	3,752	2,120	1,971
79	79	New York State Electric & Gas Corp.	129,980	36,966	184,997	145,095	95,839	7,241	3,869	1,460
81	80	Metropolitan Util. District (Omaha)	129,954	33,362	131,557	3,724	106,212	4,916	1,711	1,947
74	81	Long Beach Gas Dept.[C]	127,033	30,146	117,400	11,100	52,382	1,575	892	1,444[E]
83	82	Connecticut Natural Gas Co.	125,125	25,456	176,075	6,806	134,033	10,769	1,576	1,422[E]
84	83	Virginia Natural Gas, Div. VEPCO	123,474	18,810	106,244	N/A	85,141	9,192	2,137	2,333
82	84	Iowa Public Service Co.	121,720	39,267	370,524[B]	35,132	75,922	3,960	1,870	1,679
85	85	Providence Gas Co.[F]	120,535	21,938	149,545[B]	4,598	65,196	5,583	1,677	1,193
109	86	United Cities Gas Co.[S]	114,773	21,239	101,748	1,224	79,481	22	2,333	2,027
86	87	Pennsylvania Gas & Water Co.	112,816	32,833	165,652[T]	7,707	139,108	8,774	1,300	708
88	88	Michigan Energy Resources Co.	105,988	34,072	161,025	3,505	114,766	5,734	2,573	2349
89	89	Wisconsin Power & Light	103,469	24,812	138,388	47,355[B]	99,949	7,280	2,124	1,175[E]
88	90	Montana Power Co.	102,354	38,250	362,796	70,586	272,772	12,709	1,801	1,953
90	91	North Shore Gas Co.	97,756	33,512	154,784	6,412	110,762	245	1,660	1,520
92	92	City Gas of Florida[L]	94,575	7,452	43,704	2,542	46,652	4,578	3,028	1,077[E]
93	93	Intermountain Gas Co.[F]	94,204	26,694	147,628	3,658	72,900	3,588	3,998	1,757
95	94	Colonial Gas Co.	90,182	15,106	115,715	3,076	85,818	8,089	1,991	1,024[E]
94	95	Orange & Rockland Utilities	89,835	23,912	479,357[B]	34,126	71,361	2,786	1,491	1,240
98	96	Colorado Springs DPU	87,969	18,121	84,520	(1,336)	43,069	4,142	205	118
96	97	Mobile Gas Service Co.[F]	86,728	151,240	74,500	2,487	33,660	3,189	1,241	1,608
97	98	Gulf States Utilities Co.	85,394	8,536	43,111	1,761	31,665	1,722	1,339	1,183
99	99	North Carolina Natural Gas[A]	83,124	43,422	179,678	4,404	53,126	6,396	1,065[E]	791[E]
100	100	Cascade Natural Gas Corp.	82,551	32,714	193,194	3,191	153,431	7,914	2,857	1,407
101	101	Washington Water Power Co.	76,812	24,252	346,853[B]	59,388	59,409	1,368	2,175	1,293
102	102	Delmarva Power & Light Co.	74,598	15,604	84,747	5,800	66,094	2,231	1,022	847[E]
103	103	Arkansas Western Gas Co.	71,986	18,233	58,384	201	44,153	6,499	1,487[E]	818[E]
104	104	City of Richmond, Va.[C]	70,606	14,387	73,787	1,926	36,925	3,685	317[E]	666[E]
105	105	Michigan Power Co.	69,282	21,177	98,545	1,132	45,134	145	1,541	787[E]

The P&GJ 500 ... dimensions of the pipeline energy business

Rank 82	Rank 83	Name of Company	Number Of Customers	1982 Gas Sales, MMcf	1982 Oper. Revenues $000	1982 Net Income $000	Gas Plant Value $000 12-31-82	Additions To Plant $000	Miles of Mains	Mile of Services
107	106	Madison Gas & Electric Co.	68,514	15,531	189,204[B]	14,956[B]	62,646	4,369	1,258	965
106	107	Nashville Gas Co.	67,679	18,927	84,596	(677)	54,351	3,487	1,417	769[E]
108	108	TransLouisiana Gas Co. Inc.[A]	67,608	35,979	135,290	2,789	32,911	3,916	1,037[E]	644[E]
113	109	Rio Grande Valley Gas Co.	66,457	6,584	36,278	1,826	32,067	1,661	1,675	223
110	110	Southeastern Michigan Gas Co.	66,407	14,443	67,286	2,220	75,839	803	1,326	755[E]
111	111	Associated Natural Gas Co.	65,824	11,516	52,068	790	21,561	1,200	692[E]	621[E]
112	112	Greeley Gas Co.[A]	65,220	12,019	44,472	—	—	—	1,454	750
114	113	Northwestern Public Service Co.	64,640	53,552	112,020[B]	8,897[B]	20,780	422	1,076	1,072[E]
115	114	Gasco Inc.[A]	64,300[O]	4,890	78,429	9,798[N]	78,767[G]	2,476	587	531
116	115	Southern Indiana Gas & Elect. Co.	63,078	19,123	225,561[B]	20,883[B]	38,277	2,440	1,052	717[E]
119	116	North Central Public Service Co.	62,074	17,900	128,319	4,792	20,000[E]	2,000[E]	889	260
117	117	The Union Light, Heat & Power Co.	60,602	12,882	159,917	5,563	52,768	3,112	721	680[E]
118	118	Corpus Christi Gas Division	57,517	5,406	28,423	—	20,000[E]	250[E]	553[E]	543[E]
120	119	Union Gas System Inc.[I]	54,396	12,604	45,603	609	11,255	1,036	2,810	572[E]
124	120	Sierra Pacific Power Co.	53,975	7,696	50,135	38,505[B]	35,597	2,816	603[E]	430[E]
121	121	Arkansas Oklahoma Corp.	53,957	12,084	31,470	1,332	36,821	4,047	589	403
123	122	Springfield City Utilities[F]	53,902	10,968	50,923[B]	2,979[B]	31,540	2,783	781	871
125	123	CP National Corp.	52,263	7,822	51,611	2,321	46,390	3,386	1,337	N/A
129	124	Missouri Utilities Co.	48,555	4,341	33,891	3,252	24,872	2,161	848	552[E]
127	125	Central Hudson Gas & Elect. Corp.	47,187	9,837	61,649	35,329[B]	58,322	3,228	708	456
128	126	Valley Resources Inc.[I]	46,363	6,477	44,881	1,222	21,508	1,239	488	335
130	127	Interstate Power Co.[A]	44,949	25,286	74,824	169	26,270	2,343	403	428
131	128	Energy Services of Pensacola[F]	43,600	4,192	29,550	4,997	14,068	—	944	619
133	129	Florida Public Utilities Co.	41,186	6,583	28,633	1,299[B]	36,356[B,G]	N/A	589	468[E]
132	130	Fall River Gas Co.	40,790	5,883	42,107	1,326	17,118	737	439	425
134	131	Missouri Public Service Co.	39,990	9,177	38,864	16,245[B]	27,551	1,270	863	493
135	132	Iowa Southern Utilities Co.[A]	39,968	9,026	35,180	298	14,139	774	658	558
136	133	Wisconsin Fuel & Light Co.	37,619	14,371	66,576	1,038	12,912	1,120	851	549
137	134	Wisconsin Southern Gas Co. Inc.	37,069	8,062	36,791	1,265	26,679	1,140	1,002	612
138	135	Missouri Power & Light	34,963	6,995	32,232	1,181	26,454	1,277	708	450
139	136	Terre Haute Gas Co.	33,172	15,293	60,226	N/A	N/A	N/A	704	N/A
140	137	Roanoke Gas Co.	31,845	7,607	39,535	901	15,193	151	413	300
141	138	Battle Creek Gas Co.	31,078	11,510	47,149	1,884	32,571	3,447	555	353[E]
142	139	SE Alabama Gas District	30,362	7,230	30,056	1,288	25,884	542	773	552[E]
143	140	North Penn Gas Co.	30,340	9,896	91,452	1,669	34,884	1,837	1,544	345[E]
145	141	Chattanooga Gas Co.	29,389	21,317	93,462	1,408	39,490	1,291	844	393[E]
144	142	Haverhill Gas Co.[A]	29,285	4,519	27,860	1,001	21,029	3,005	283	279
150	143	Kokomo Gas & Fuel Co.[A]	28,320	11,093	36,463	—	—	—	544	444
146	144	Delta Natural Gas. Co.[C]	27,859	5,920	25,600	678	26,042[G]	3,138	792[E]	263[E]
148	145	Berkshire Gas Co.[A]	27,393	5,551	28,083	1,163	21,754	2,956	562	320
149	146	Penn Fuel Gas Co.	27,375	17,232	44,898	N/A	N/A	N/A	285	258
—	147	Huntsville Util. Gas System[A]	26,103	5,574	22,103	—	—	—	535	399
152	148	Ohio Gas Co.	25,166	6,705	31,322	1,862	27,627	2,212	504	410
154	149	Alexandria Gas Dept.[A]	24,250	3,078	7,242	—	—	—	57	229[E]
153	150	Ohio Valley Gas[A]	23,867	6,919	21,661	—	—	—	563	240

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155	151	Cheyenne Light Fuel & Power Co.[A]	23,580	14,451	40,119	—	—	—	355	223
156	152	City of Palo Alto[A]	22,898	2,964	13,061	234	3,939	304	204	215
159	153	City of Hamilton	22,658	4,501	15,582	—	—	—	210	216[E]
157	154	City of Mesa[C]	22,638	2,372	13,723	1955	13,805	2,522	530	278
158	155	Great Falls Gas Co.[A]	22,324	4,486	19,407	75	9,851	501	349	416
162	156	Rocky Mountain Natural Gas	21,743	4,848	21,653	518	25,972	3,202	426	399
161	157	City of Duluth Dept. of Water & Gas	21,211	4,640	22,912	1,083	22,798	1,780	418	250[E]
164	158	Austell Natural Gas System[U]	21,174	3,985	18,649	—	15,130	368	488	429
160	159	Willmut Gas & Oil[A]	20,576	3,482	13,660	—	—	—	500	194
166	160	Brazos River Gas Co.	20,327	2,585	12,802	559	4,284	310	521	37
165	161	Albany Water Gas & Light Comm.[A]	20,271	5,200	19,000	—	—	—	335	191
168	162	Inter-City Gas Corp. Inc.[A]	19,761	11,809	50,965	N/A	N/A	N/A	415	320
—	163	Gas Service Inc. (N.H.)	19,622	4,103	22,290	—	—	—	410	223
167	164	Knoxville Utilities Board	19,607	6,706	25,819	—	—	—	652	388
175	165	Okaloosa County Gas District	18,642	2,179	12,401	465	12,427	153	580	501
170	166	Northern Indiana Fuel & Light Co. Inc.	18,291	4,995	21,898	761	17,062	963	478	208[E]
176	167	South Coast Gas Co.[C]	18,185	1,636	—	—	—	—	486	242
173	168	Gulf Natural Gas Co.[A]	18,176	3,736	—	—	—	—	443	100
169	169	Kansas Public Service Co.[A]	17,766	3,450	10,967	—	—	—	258	174
171	170	Great River Co.[A]	17,749	5,796	22,360	—	—	—	444	167[E]
172	171	Union Electric Co.	17,218	2,744	14,769	400	14,041	476	259	196[E]
177	172	Jackson Utility Division[A]	16,064	5,145	14,104	—	—	—	381	156[E]
178	173	National Gas & Oil Corp.	15,937	12,873	46,211	2,736	25,838	2,112	1,033	112
180	174	Citizens Utilities[A]	15,893	2,514	10,967	—	—	—	326	28
179	175	Manchester Gas[F]	15,404	N/A	15,967	579	12,281	1,035	194	178
181	176	Northern Gas Co.[A]	15,045	3,125	10,660	—	—	—	274	142[E]
183	177	Fitchburg Gas & Electric Light	14,955	2,653	46,483[B]	1,990[B]	14,895	1,133	294	170[E]
189	178	Trussville Utilities Board[F]	14,860	2,370	10,286[T]	1,777	18,412	595	307	352
185	179	City of Danville Gas Department[C]	14,851	5,522	22,025	1,128	5,170	229	244	175
174	180	Pennsylvania & Southern Gas[F]	14,800	5,015	26,453	731	14,676	679	463	207
190	181	Chesapeake Utilities Corp.	14,750	1,980	11,740	2,934	10,489	792	312	168[E]
184	182	Las Cruces Gas System[A]	14,657	1,554	7,000	—	—	—	302	138[E]
193	183	Gainesville Gas Co.[A]	14,618	3,137	—	—	—	—	320	139[E]
187	184	Moran Utilities[A]	14,060	1,473	10,691	—	—	—	287	96
188	185	Houma Municipal Gas System[A]	14,013	3,846	—	—	—	—	156	132[E]
192	186	Tennessee-Virginia Energy[A]	13,666	8,644	42,126	—	—	—	573	129[E]
191	187	Great Plains Natural Gas[A]	13,620	3,535	15,299	—	—	—	305	128[E]
—	188	Richmond Gas[A]	13,568	3,812	12,734	—	—	—	213	153
195	189	Vermont Gas Systems	12,694	4,367	27,748	1,106	11,481	430	256	154
194	190	Lancaster Municipal Gas Co.[A]	12,664	2,105	8,606	—	—	—	231	191[E]
197	191	City of Warner Robbins Gas[A]	12,035	5,643	6,858	—	—	—	191	114
196	192	Charlottesville Gas Division	12,032	2,376	13,759	—	—	—	182	165
198	193	Corning Natural Gas Corp.	11,840	12,515	52,551	671	8,229	605	82	238
—	194	Ft. Hill Natural Gas Authority[A]	11,564	2,908	13,396	—	—	—	630	131[E]
199	195	Hobbs Gas[A]	11,561	1,520	5,931	—	—	—	250	132[E]

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—	196	Holyoke Gas & Electric[A]	11,500	2,079	7,865	—	—	—	130	77
200	197	Dalton Utilities[A]	11,000	9,617	—	—	—	—	40	104
202	198	Middle Tennessee Gas Util. Dist.[A]	10,745	2,880	12,100	—	—	—	594	328
201	199	Lake Superior District Power Co.[A]	10,641	5,541	17,513	—	—	—	232	141
203	200	Citizens Gas Fuel	10,241	2,637	14,120	812	9,372	906	235	133[E]
205	201	Midwest Energy Inc.	10,073	2,026	6,184	154	4,002	251	222	122[E]
206	202	Northeast Oklahoma Public Utilities[A]	9,858	—	—	—	—	—	316	92
212	203	City of Rocky Mount	9,850	2,178	N/A	N/A	11,031	231	148	100
211	204	Lynchburg Gas	9,822	5,027	24,284	599	8,878	1,019	357	190
207	205	Hastings Utilities[A]	9,616	17	5,508	—	—	N/A	140	100
208	206	Greenwood Public Works[A]	9,582	2,831	12,045	—	—	—	283	143
209	207	Marshall County Gas District[A]	9,453	24	75	—	—	—	224	90
213	208	Illinois Gas Co.[A]	9,360	1,569	5,994	—	—	—	248	115
210	209	Southern Public Service	9,215	1,247	6,506	53	1,691	234	150	100
214	210	Austin Utilities	9,182	1,951	10,711	90	1,846	178	143	N/A
—	211	Pascagoula Gas System[A]	9,059	N/A	N/A	N/A	N/A	N/A	166	85[E]
216	212	City of Pleasant Grove[A]	9,043	939	4,799	713	500	0	224	112
218	213	Cedar Falls Utilities[A]	8,968	1,446	5,830	—	—	—	132	132
217	214	Superior Water, Light & Power Co.	8,897	2,124	10,931	435	6,313	118	115	117
—	215	Lake Apopka Natural Gas District[A]	8,639	—	—	—	—	—	276	82
219	216	City of LaGrange Gas Department[A]	8,570	2,000	1,900	—	—	—	140	100
220	217	Vicksburg Water & Gas[A]	8,444	1,017	5,021	—	—	—	32	80
222	218	Norco Gas & Fuel Co. Inc.[C]	8,343	1,119	5706	87	2,500	194	189	95[E]
215	219	City of Florence Gas Department[F]	8,128	5,274	5,718	44	4,221	0	270	242
—	220	Midwest Natural Gas	8,051	18,042	5,819	N/A	N/A	N/A	18	122
225	221	Orangeburg Dept. of Public Util.[F]	7,997	3,106	12,332	1,319	3,686	73	198	80
226	222	SW Texas Municipal Gas Corp.[A]	7,358	268	—	—	—	—	163	70
223	223	Tallahassee Municipal Gas System[A]	7,318	1,420	6,593	—	—	—	236	70
224	224	Norwich Department of Public Util.	7,188	929	6,779	555	5,829	383	106	82[E]
227	225	Clinton-Newberry Gas Authority[A]	7,112	9,295	—	—	—	—	500	135[E]
234	226	Peoples Natural Gas Co. of S.C.	7,104	3,240	15,931	353	5,000	1,231	211	199
228	227	Owatonna Public Utilities	7,098	2,447	9,606	1,110	4,379	1,960	115	81[E]
230	228	Schagrin Gas[A]	7,000	—	—	—	—	—	70	71[E]
232	229	City of Del Rio Gas System	6,909	457	2,265	2,419	N/A	N/A	123	40
229	230	Graysville Municipal Gas System[A]	6,900	577	3,162	—	—	—	130	25
231	231	Dyersburg Municipal Gas System[A]	6,863	1,340	—	—	—	—	195	65
—	232	Houston DPW, Gas Division[A]	6,695	484	2,278	—	—	—	57	71[E]
—	233	Rio Grande Natural Gas Assoc.	6,691	593	2,282	—	—	—	421	115
244	234	Leesburg Natural Gas Department[A]	6,600	831	—	—	—	—	118	62[E]
277	235	Petrolane Wyoming Gas Services[F]	6,526	1,116	N/A	N/A	N/A	N/A	8	8
233	236	Phenix (Ala.) Dept. of Public Util.[A]	6,506	1,329	5,236	—	—	—	151	87
239	237	Liberal Gas Co.[A]	6,500	1	2,800	—	—	—	105	74[E]
237	238	Dixie Gas Co. Inc.[C]	6,358	555	2,858	17	1,944	123	185	34[E]
238	239	Westfield Gas & Electric Light	6,340	1,070	5,690	N/A	N/A	N/A	122	93
236	240	Missouri Edison	6,241	2,213	51,160[B]	3,819	6,195	332	304	146

The P&GJ 500 ... dimensions of the pipeline energy business

Rank 82	Rank 83	Name of Company	Number Of Customers	1982 Gas Sales, MMcf	1982 Oper. Revenues $000	1982 Net Income $000	Gas Plant Value $000 12-31-82	Additions To Plant $000	Miles of Mains	Mile of Services
242	241	City of Wilson[C]	6,123	952	4,855	796	2,503	166	117	61
240	242	City of Fultondale Gas Board[A]	6,039	583	2,815	—	—	—	145	57
249	243	Concord Natural Gas Corp.	6,026	1,184	7,147	205	3,670	613	151	80
247	244	Shenandoah Gas Co.	6,017	3,659	19,031	356	11,600	882	224	88
246	245	Gas Utilities Co. (Ill.)[A]	5,892	7,540	20,737	—	—	—	150	67[E]
243	246	Consumers Gas Utility Co.[A]	5,881	974	4,345	—	—	—	266	62
251	247	Watertown Gas Department	5,733	1,234	5,113	609	1,904	155	117	106
248	248	Cartersville Gas Department[A]	5,720	2,250	1,856	—	—	—	163	54
250	249	Bay City Gas Co.[A]	5,620	852	900	—	—	—	105	53
253	250	Consumers Gas Co.[A]	5,598	1,165	3,657	—	—	—	88	102
254	251	Cullman-Jefferson Counties Gas Dist.[A]	5,573	1,680	7,400	—	—	—	60	350
—	252	Morgan City Municipal Gas[A]	5,536	—	—	—	—	—	79	53[E]
255	253	Sylacauga Utilities Board[A]	5,531	1,390	5,432	—	—	—	472	575
256	254	The Polaris Corp.[A]	5,476	443	1,970	—	—	—	106	68
259	255	Elizabethtown Natural Gas	5,352	1,273	5,117	506	1,000	0	130	100
258	256	The Toledo Edison Co.	5,331	1,427	482[B]	106	3,550	353	106	80
260	257	City of Thibodaux[A]	5,207	804	3,771	—	—	—	79	49
263	258	City of Moss Point[A]	5,200	352	479	—	—	—	95	48
264	259	Bristol & Warren Gas Co.[I]	5,168	4,117	4,190	149	1,767	132	75	44[E]
262	260	Pike Natural Gas Co.	5,060	973	5,311	150	3,644	248	152	57[E]
—	261	City of St. Augustine Gas[A]	5,012	—	—	—	—	—	51[E]	57[E]
269	262	Decatur Utilities[C]	4,936	5,689	23,507	529	7,030	419	166	87
267	263	New Ulm Gas Dept.[A]	4,916	1,744	5,278	156	1,752	39	72	44[E]
265	264	City of Milton	4,896	3,286	N/A	N/A	N/A	N/A	154	56[E]
257	265	Northwest Alabama Gas District[A]	4,875	8,771	18,496	—	—	—	276	203
268	266	City of Chanute[A]	4,833	763	—	—	—	—	84	46[E]
270	267	Fairhope Gas Department[A]	4,781	482	1,156	—	—	—	85	54[E]
271	268	St. Joseph Light & Power[A]	4,684	1,081	5,015	—	—	—	122	53
272	269	Thomasville Water & Light[A]	4,663	756	3,267	—	—	—	141	44[E]
276	270	City of Winfield[A]	4,609	808	2,290	—	—	—	78	23
274	271	Oak Ridge Utility District[A]	4,601	788	3,156	—	—	—	140	66
—	272	DeKalb-Cherokee Counties Gas[A]	4,558	877	2,177	—	—	—	171	43[E]
—	273	City of Union[A]	4,531	1,404	5,883	—	—	—	136	81
—	274	Lexington Gas System (Tenn.)[A]	4,516	1,917	2,857	—	—	—	67	43[E]
275	275	Lexington Gas Department (N.C.)	4,512	2,389	8,380	—	—	—	13	77
278	276	West Tenn. Public Util. District[A]	4,415	1,830	4,896	—	—	—	314	130
279	277	Clarksville Gas Department[A]	4,379	2,826	6,755	—	—	—	212	41
280	278	Westlake Municipal Natural Gas[A]	4,376	293	1,234	193	905	42	84	45
—	279	Ft. Pierce Gas Department[A]	4,363	815	2,887	—	—	—	119	84
281	280	Cody Gas	4,310	2,181	8,696	576	5,050	495	304	51[E]
283	281	City of Shelby Gas Department	4,277	3,032	12,433	—	—	—	111	81
284	282	City of Dumas[A]	4,200	448	—	—	—	—	38	40
282	283	Indiana Natural Gas[A]	4,173	873	3,237	—	—	—	107	39
—	284	Frederick Gas Co. Inc.[A]	4,166	2,616	10,888	—	—	—	81	55
288	285	Chambersburg Gas Department[A]	4,135	1,053	3,438	—	—	—	54	50

The P&GJ 500 ... dimensions of the pipeline energy business

Rank 82	Rank 83	Name of Company	Number Of Customers	1982 Gas Sales, MMcf	1982 Oper. Revenues $000	1982 Net Income $000	Gas Plant Value $000 12-31-82	Additions To Plant $000	Miles of Mains	Mile of Services
—	286	City of Toccoa[A]	4,101	711	2,974	—	—	—	100	39
285	287	Bluefield Gas Co.[A]	4,093	1,177	4,943	—	—	—	89	21
—	288	Ville Platte Gas System[A]	4,080	377	2,523	—	—	—	88	38
287	289	Syracuse Suburban Gas Co. Inc.[F]	4,063	3,626	234	157	3,915	275	81	N/A
—	290	Nebraska City Utilities[A]	4,057	792	3,117	—	—	—	41[E]	46[E]
290	291	Deming Gas System[A]	4,011	497	—	—	—	—	68	38[E]
291	292	Lawrenceburg Gas Co.[A]	3,982	2,904	8,724	—	—	—	111	14
—	293	Palatka Gas Authority[A]	3,980	238	1,233	—	—	—	83	56
—	294	City of Summerville[A]	3,931	558	—	—	—	—	201	87
—	295	Natural Gas Distributing[M]	3,911	2,237	2,444	27	564	0	92	14
—	296	Robstown Utility System	3,90[illegible]	283	1,669	(38)	221	6	54	16
—	297	Elk River Public Utility District[A]	3,895	—	6,143	—	—	—	199	37[E]
292	298	Los Alamos County Utilities	3,795	744	2,634	0	2,993	448	63	37
—	299	Town Gas of Illinois	3,718	595	2,878	84	2,078	61	79	51
289	300	Corinth Gas & Water Department	3,564	544	2,275	18	1,107	104	78	41[E]

The 100 Leading Gas Pipelines

(Including Gas Transmission Lines; Gathering Systems; Interstate and Intrastate)

Rank 82	Rank 83	Name of Company	Miles Of Pipelines Total	Transmission	Field, Gath.	Storage	1982 Gas Sales, MMcf	1982 Oper. Revenues $000	1982 Net Income $000	Gas Plant Value $000 12-31-82	Additions to plant 1982 $000
1	1	Northern Natural Gas Co.	23,238	14,570	8,462	206	652,218	2,436,213	85,250	2,142,352	143,659
2	2	El Paso Natural Gas Co.	21,598	9,331	12,249	18	1,018,510	4,054,407	48,631	2,861,464	163,772
3	3	Columbia Gas Transmission Corp.	18,254	10,190	6,834	1,230	932,768	3,856,735	61,470	1,966,375	216,271
4	4	Tennessee Gas Pipeline Co.	13,965	13,931	31	2	1,034,546	3,947,222	183,969	2,992,372	193,495
5	5	K N Energy, Inc.	13,137	10,274	2,842	21	121,740	434,701	26,452	520,988	37,431
6	6	Natural Gas Pipeline Co. of America[F]	12,671	10,764	1,811	96	1,030,673	2,938,324	111,216	2,189,580	127,557
7	7	Panhandle Eastern Pipe Line Co.	12,538	6,816	5,613	109	610,039	2,045,032	145,325	1,430,751	107,744
9	8	Michigan-Wisconsin Pipe Line Co.	11,386	7,700	3,493	193	548,419	2,455,009	164,093	2,284,323	255,161
8	9	Lone Star Gas Co. (Enserch)	10,767	8,429	2,267	71	495,015	2,151,374	34,972	840,121	63,026
11	10	Transcontinental Gas Pipe Line Corp.	10,142	9,875	146	121	936,267	3,652,623	130,842	2,547,234	278,720
14	11	United Gas Pipe Line	9,800	7,680	2,120	—	1,029,592	3,436,000	153,000	1,072,492	117,000
12	12	Northwest Central Pipeline	9,748	5,835	3,733	180	287,787	1,043,039	43,404	566,839	15,256
13	13	Texas Eastern Transmission Corp.	9,709	9,463	48	198	884,664	3,146,927	230,274	2,246,071	180,238
15	14	Arkla, Inc.	9,194[A]	6,136	3,015	43	299,326	1,075,509	95,380	1,057,864	89,659
16	15	Consolidated Gas Supply Corp.	8,313	3,599	4,195	519	594,544	2,402,931	66,577	1,056,580	80,962
17	16	Southern Natural Gas Co.	7,681	7,493	140	48	526,029	1,987,250	96,203	1,086,749	114,599
—	17	Texas Oil & Gas Corp.[I]	7,562	989	6,573	—	389,342	1,878,557	247,095	1,941,735	150,361
18	18	Northwest Pipeline Corp.	6,628	3,467	3,154	7	282,000	1,601,832	152,963	1,293,839	97,000
19	19	Colorado Interstate Gas Co.	6,155	2,725	3,195	235	321,567	1,149,576	81,840	655,208	39,752
20	20	Texas Gas Transmission Corp.	5,891	5,613	61	217	620,676	2,097,931	113,463	825,749	65,031
21	21	Valero Transmission Co.	5,293	4,034	1,259	—	405,687	1,710,124	46,450	461,639	50,099
23	22	Pacific Gas & Electric Co.	4,833	3,849	932	52	683,682	3,607,424	192,289	1,986,989	82,561
24	23	ONEOK, Inc[I]	4,751	4,751	—	—	312,978	127,700	56,094	712,658	67,300
—	24	Peoples Natural Gas (Div. Internorth)	4,683	4,003	680	—	N/A	N/A	N/A	N/A	N/A
31	25	Trunkline Gas Co.	4,482	3,934	523	25	516,368	1,802,219	46,730	946,479	21,704

A 1981 Data F FY ended 9-30-82 I FY ended 8-31-82 V Includes Michigan Gas Storage Co. W Began Operations in late 1982

The P&GJ 500 ... dimensions of the pipeline energy business

Rank 82	Rank 83	Name of Company	Miles Of Pipelines Total	Transmission	Field, Gath.	Storage	1982 Gas Sales, MMcf	1982 Oper. Revenues $000	1982 Net Income $000	Gas Plant Value $000 12-31-82	Additions to plant 1982 $000
25	26	Florida Gas Transmission Co.	4,314	4,314	—	—	189,216	678,345	40,456	460,406	6,862
29	27	Transwestern Pipeline Co.	4,309	4,309	—	—	290,425	1,150,629	36,421	618,022	89,901
26	28	Houston Natural Gas Corp.	4,235	1,200	3,000	35	1,025,051	2,347,461	227,936	N/A	N/A
10	29	Pioneer Corp. (Westar Trans. Div.)	4,218	3,511	707	—	192,805	626,417	N/A	54,972	12,325
27	30	Columbia Gulf Transmission Corp.	4,174	2,543	1,631	—	635,533	212,000	49,000	1,016,349	47,099
28	31	Montana-Dakota Utilities Co.	4,127	3,128	948	50	63,000	253,183	10,073	268,397	28,897
22	32	National Fuel Gas Supply Corp.	3,568	1,464	1,665	439	194,900	732,674	16,294	201,720	19,192
41	33	Western Gas Pipeline Co.	3,403	1,625	1,764	14	84,093	338,952	4,708	72,839	8,626
—	34	Mustang Fuel Co.	3,212	—	—	—	N/A	N/A	N/A	N/A	N/A
32	35	Mitchell Energy & Development Corp.	3,052	—	—	—	92,166	961,713	80,303	120,572	20,858
33	36	Montana Power Co.	2,820	1,772	994	54	33,727	362,796	70,586	272,772	12,709
34	37	North Carolina Natural Gas Corp.	2,589	853	1,736	—	44,087	183,829	3,878	87,452	7,482
—	38	East Ohio Gas Co.	2,463	1,270	1,193	—	N/A	N/A	N/A	N/A	N/A
36	39	Michigan Consolidated Gas Co.	2,348	2,186	52	110	338,561	1,657,006	26,669	1,294,898	54,697
35	40	Peoples Natural Gas Co. (Pa.)	2,335	1,048	1,249	38	N/A	N/A	N/A	N/A	N/A
37	41	Mississippi River Transmission Co.	2,214	1,969	170	75	170,599	702,030	31,030	332,233	24,342
—	42	United Texas Transmission Corp.	2,204	1,885	319	—	507,584	1,897,023	118,111	562,958	85,592
38	43	Equitable Gas Co.	2,092	476	1,489	127	75,673	342,598	33,648	426,979	29,824
39	44	Kentucky-West Virginia Gas Co.[A]	2,044	27	2,016	—	27,390	53,420	24,469	142,244	4,400
42	45	Transok Pipe Line Co.	2,031	792	1,239	—	152,926	148,659	16,986	157,584	34,679
40	46	Western Slope Gas Co.	2,030	1,563	447	20	48,719	732,334	N/A	377,891	55,922
43	47	Mountain Fuel Supply Co.	1,971	1,299	662	10	127,364	412,131	30,713	625,985	72,450
48	48	Consumers Power Co.[V]	1,959	1,679	173	107	287,545	1,222,227	83,257	1,335,566	38,111
44	49	Louisiana Intrastate Gas Corp.[A]	1,874	1,874	—	—	203,617	844,854	59,168	243,624	21,267
45	50	Southwest Gas Corp.	1,683	1,677	6	—	78,279	399,116	14,397	333,167	27,628
51	51	South Carolina Gas & Electric Co.	1,653	1,653	—	—	116,481	47,759	N/A	64,341	36,148
46	52	National Fuel Gas Distr. Corp.	1,411	1,072	339	—	191,712	920,529	18,197	460,282	29,589
47	53	Central Illinois Public Service	1,372	1,351	9	12	33,255	587,083	66,344	126,994	6,830
49	54	Great Lakes Gas Transmission Co.	1,305	1,305	—	—	65,345	536,438	25,061	511,470	45,300
50	55	Carnegie Natural Gas Co.	1,170	257	913	—	22,909	89,032	3,180	75,612	8,434
—	56	Clajon Gas Co.	1,130	30	1,100	—	N/A	N/A	N/A	N/A	N/A
68	57	Northern Utilities Inc.	1,028	1,005	23	—	17,810	82,798	1,980	31,192	(2,698)[1]
52	58	East Tennessee Natural Gas Co.	1,012	1,012	—	—	75,687	288,932	4,266	76,170	2,000
67	59	Tejas Gas Corp.	992	992	—	—	77,204	103,701	7,149	38,916	6,222
—	60	Pacific Lighting Gas Supply Co.	987	905	—	82	310,794	1,254,234	25,836	285,947	13,147
53	61	Arkansas Oklahoma Gas Corp.	983	571	409	3	11,969	34,299	N/A	39,209	4,077
54	62	Arkansas Western Gas Co.	966	697	269	—	18,232	58,384	20,074	44,153	6,499
56	63	Algonquin Gas Transmission Co.	930	930	—	—	158,710	742,587	18,690	212,294	33,734
55	64	Midwestern Gas Transmission Co.	915	903	—	12	228,501	908,400	1,274	162,532	1,808
57	65	North Penn Gas Co.	890	587	290	13	21,812	91,597	1,669	34,548	1,897
—	66	Northern Border Pipe Line Co.[W]	823	823	—	—	N/A	N/A	N/A	N/A	N/A
58	67	Mid Louisiana Gas Co.	816	398	418	—	26,805	109,359	11,859	69,086	8,378
59	68	Pacific Gas Transmission Co.	799	799	—	—	252,574	1,419,973	31,608	372,562	8,209
60	69	South Georgia Natural Gas Co.	769	769	—	—	28,788	116,968	5,833	20,435	1,630
—	70	Ferguson Crossing Pipe Line Co.	638	—	638	—	N/A	N/A	N/A	N/A	N/A

The P&GJ 500 ... dimensions of the pipeline energy business

Rank 82	Rank 83	Name of Company	Miles Of Pipelines Total	Transmission	Field, Gath.	Storage	1982 Gas Sales, MMcf	1982 Oper. Revenues $(000)	1982 Net Income $(000)	Gas Plant Value $(000) 12-31-82	Additions to plant 1982 $(000)
—	71	Armadillo Gas Gathering Co.	610	—	610	—	N/A	N/A	N/A	N/A	N/A
30	72	Public Service Co. of N.C. Inc.	607	607	—	—	41,863	211,793	7,000	N/A	3,016
77	73	Northern Gas Co.	607	555	38	14	9,009	45,421	(1,113)	17,689	2,762
62	74	Associated Natural Gas Co	602	602	—	—	11,516	52,068	790	21,560	1,199
63	75	Valero Interstate Transmission Co.	579	320	259	—	21,816	61,249	1,682	24,795	1,768
66	76	Commonwealth Gas Pipeline Corp.	559	559	—	—	69,443	279,227	3,254	49,048	9,124
—	77	Perry Gas Co's	555	—	555	—	N/A	N/A	N/A	N/A	N/A
64	78	Channel Industries Gas Co.	552	552	—	—	102,061	436,079	9,443	49,103	7,558
—	79	Monterrey Pipeline Co.	550	550	—	—	N/A	N/A	N/A	N/A	N/A
65	80	Inland Gas Co. Inc.	534	94	440	—	7,264	27,749	(251)	22,498	215
71	81	Washington Gas Light Co.	516	498	18	—	111,455	682,829	21,089	720,039	54,801
—	82	Llano, Inc.	509	—	509	—	25,500	N/A	N/A	N/A	N/A
—	83	Southeast Alabama Gas Dist.	470	470	—	—	7,230	30,055	1,287	25,883	541
70	84	Sea Robin Pipeline Co.	438	438	—	—	195,892	564,583	9,534	239,136	2,145
—	85	Dow Pipeline Co.	398	398	—	—	N/A	N/A	N/A	N/A	N/A
—	86	Seagull Pipeline Corp.	392	—	392	—	98,439	67,082	3,816	10,051	1,134
—	87	MGTC, Inc.	374	364	10	—	3,680	14,567	116	5,167	29
72	88	Mountain Fuel Resources	371	123	212	36	5,817	28,353	9,615	66,324	13,437
80	89	Experanza Transmission Co.	355	355	—	—	19,267	85,185	6,387	13,134	4,191
73	90	Pacific Interstate Trans. Co.	351	—	—	—	54,280	441,522	5,897	56,744	1,071
—	91	Winnie Pipeline Co.	333	—	333	—	N/A	N/A	N/A	N/A	N/A
74	92	Stingray Pipeline Co.	325	325	—	—	N/A	46,775	9,985	235,439	234,779
75	93	Ala. - Tenn. Natural Gas Co.	316	314	2	—	33,346	132,872	5,982	20,078	2,700
—	94	Palo Duro Pipeline Co.	315	—	—	—	N/A	N/A	3,400	14,600	N/A
6	95	Louisville Gas & Electric Co.	306	178	—	128	52,005	210,822	43,174	90,898	7,190
79	96	Ringwood Gathering Co.	302	26	276	—	10,584	21,619	(160)	10,881	573
78	97	Western Gas Interstate Co.	296	243	53	—	4,496	15,277	168	7,396	486
—	98	Amoco Gas Co.	279	247	32	—	N/A	N/A	N/A	N/A	N/A
84	99	Valley Gas Transmission Inc.	270	—	270	—	9,559	31,650	396	4,720	139
81	100	Eastern Shore Natural Gas	247	247	—	—	8,529	42,970	1,774	10,272	778

The 100 Leading Liquid Pipelines

Rank 82	Rank 83	Name of Company	Delivered out of system in 1982 Bbl (000) Crude oil	Products	Total	1982 Financial Oper Rev $(000)	Net Income $(000)	Property Value $(000) 12-31-82	Changes in Prop. Val. $(000)	Miles of Lines Owned/Operated Gath. Lines	Crude Trunk	Products Trunk	Total
1	1	Arco Pipe Line Co.[D]	523,685	138,687	662,372	873,120	268,035	2,416,955	19,090	1,800	2,673	3,775	8,248
2	2	Colonial Pipeline Co.	—	625,922	625,922	479,759	117,975	1,313,253	12,949	—	—	5,250	5,250
4	3	Exxon Pipeline Co.[D]	447,573	106,402	553,974	820,590	292,662	2,350,168	13,437	1,895	4,819	2,402	9,116
3	4	Shell Pipe Line Co.	378,487	148,844	527,331	148,030	36,209	418,486	964	2,000	4,657	411	7,068
7	5	Gulf Pipeline Co.	258,698	207,915	466,613	105,187	25,841	217,425	2,726	1,562	938	1,769	4,268
6	6	Amoco Pipeline Co.	304,879	121,021	425,900	174,507	56,487	484,783	17	2,333	7,808	2,049	12,190
9	7	Lakehead Pipe Line Co.	387,267	—	387,267	158,835	41,229	438,548	(1,749)	—	2,599	—	2,599
10	8	Mobil Pipe Line Co.[D]	253,457	93,896	347,354	153,121	54,948	291,254	12,536	4,362	5,150	2,297	11,809
11	9	Sohio Pipe Line Co.[D]	293,477	46,810	340,287	1,204,846	395,027	3,293,015	16,932	1,074	835	142	2051
8	10	Texas Pipe Line Co.	209,261	127,360	336,621	97,069	31,406	260,364	4,643	1,224	2,494	539	4,257

A Does not include undivided ownership interest in systems operated by other carriers.
B Listed as CRA Inc. in 1982.
C Listed as Trans-Oil in 1982 due to typographical error.
D Owns part of the Trans-Alaska Oil Pipeline.

The P&GJ 500 ... dimensions of the pipeline energy business

Rank 82	Rank 83	Name of Company	Delivered out of system in 1982 Bbl (000) Crude oil	Products	Total	1982 Financial Oper. Rev. $(000)	Net Income $(000)	Property Value $(000) 12-31-82	Changes in Prop. Val. $(000)	Miles of Lines Owned/Operated Gath. Lines	Crude Trunk	Products Trunk	Total
11	11	Buckeye Pipe Line Co.	13,359	256,704	270,063	101,858	18,677	343,875	4,195	—	130	3,340	3,470
12	12	Phillips Pipe Line Co.	91,199	176,894	268,093	124,073	21,952	333,816	10,996	1,107	1,978	3,570	6,655
5	13	Marathon Pipe Line Co.	132,528	101,299	233,827	113,887	41,697	330,718	2,271	1,063	1,697	1,379	4,139
14	14	Southern Pacific	—	230,450	230,450	72,250	25,112	92,980	7,846	—	—	2,511	2,511
17	15	Continental Pipe Line Co.	166,692	50,595	217,287	66,457	29,132	159,338	5,277	4,000	1,522	1,808	7,330
16	16	Chevron Pipe Line Co.	165,503	35,334	200,837	73,860	17,516	199,275	19,662	214	1,435	1,490	3,139
15	17	Sun Pipe line Co.	77,828	99,477	177,305	53,564	19,177	129,540	4,048	490	703	3,076	4,269
19	18	Williams Pipe Line Co.	5,305	164,072	170,007	140,946	35,404	454,586	17,183	—	82	8,025	8,107
18	19	Cities Service Pipe Line Co.	163,397	3,285	166,682	26,299	4,864	64,717	3,730	626	878	110	1,614
21	20	Texas-New Mexico Pipeline Co.	156,809	—	156,809	33,870	7,737	92,239	5,396	1,883	2,225	—	4,108
20	21	Plantation Pipe Line Co.	—	155,982	155,982	85,939	16,153	268,737	2,788	—	—	3,158	3,158
23	22	Texas Eastern Prod. Pipeline Co.	104	137,141	137,245	103,687	N/A	399,215	6,199	—	—	3,385	3,385
24	23	West Texas Pipe Line Co.	134,778	—	134,778	26,062	6,357	44,979	158	—	581	—	581
22	24	Mapco, Inc.	—	130,570	130,570	83,662	35,810	425,060	21,046	—	—	8,025	8,025
60	25	Mid-Valley Pipeline Co.	124,065	—	124,065	52,324	12,023	114,610	762	—	92	—	92
25	26	Four Corners Pipe Line Co.	93,447	17,428	110,905	47,520	8,150	131,249	32,468	284	1,202	24	1,510
30	27	Explorer Pipeline Co.	—	104,544	104,544	44,775	4,798	249,897	999	—	—	1,397	1,397
26	28	Pure Transportation co.	81,439	20,900	102,339	25,640	7,587	80,536	10,832	820	731	12	1,563
29	29	BP Pipeline Inc.	98,490	—	98,490	576,974	205,664	1,595,469	9,545	—	818	—	818
65	30	Loop Inc.	95,985	—	95,985	N/A	(40,553)	732,923	732,923	—	48	—	48
72	31	Locap Inc.	81,221	—	81,221	9,742	—	121,339	—	—	58	—	58
28	32	Ashland Pipe Line Co.	80,865	—	80,865	30,395	9,311	90,551	44	432	870	—	1,302
31	33	Wolverine Pipe Line Co.	—	76,482	76,482	21,850	4,835	71,141	407	—	—	620	620
33	34	Lake Charles Pipe Line Co.	—	71,226	71,226	3,843	656	10,367	38	—	—	13	13
32	35	Olympic Pipeline Co.	—	71,187	71,187	20,219	5,437	56,741	243	—	—	391	391
27	36	Chicap Pipe Line Co.	69,856	—	69,856	11,956	3,214	38,556	34	—	235	—	235
42	37	Platte Pipe Line Co.	62,486	—	62,486	33,076	10,965	71,485	1,229	—	1,280	—	1,280
41	38	West Shore Pipe Line Co.	—	60,509	60,509	13,505	2,921	32,676	167	—	—	322	322
36	39	Owensboro-Ashland Co.	—	60,004	60,004	9,308	1,791	43,514	26	—	295	—	295
40	40	Badger Pipe Line Co.	—	57,474	54,474	11,532	2,341	24,182	179	—	—	328	328
46	41	Minnesota Pipe Line Co.	56,196	—	56,196	16,220	2,509	28,875	—	—	365	—	365
58	42	Wesco Pipe Line Co.	55,332	—	55,332	16,866	674	65,991	4,946	704	681	—	1,385
34	43	Texaco-Cities Serv. Pipe Line Co.	52,972	—	52,972	6,481	2,066	52,987	(13,122)	—	276	—	276
38	44	Southcap Pipe Line Co.	50,257	—	50,257	14,927	2,726	53,372	27	—	—	—	—
37	45	Seaway Pipeline Inc.	48,163	—	48,163	12,085	(14,559)	209,003	(4)	—	515	—	515
45	46	Amdel Pipeline Inc.	32,275	9,646	44,921	7,520	5,721	27,293	—	10	529	28	567
51	47	Shamrock Pipe Line Corp.	27,572	16,264	43,790	16,449	5,058	22,666	3,929	635	316	544	1,495
48	48	Kaneb Pipe Line Corp.	—	42,041	42,041	26,495	7,480	89,014	23,527	—	—	1,671	1,671
35	49	Portland Pipe Line Corp.	41,196	—	41,196	16,975	3,387	53,121	44	—	510	—	510
39	50	Texoma Pipe Line Co.	38,595	—	38,595	15,019	(4,819)	157,945	853	—	504	—	504
43	51	Total Pipeline Corp.	26,591	11,693	38,284	6,830	470	23,429	469	231	436	64	731
52	52	Dome Pipeline Corp.	—	37,814	37,814	6,506	9,834	22,002	100	1	8	130	139
54	53	Collins Pipeline Co.	—	36,919	36,919	4,780	1,266	14,318	—	—	—	124	124
44	54	Santa Fe Pipe Line Co.	—	36,689	36,689	20,445	6,717	48,231	420	—	—	899	899
50	55	Hydrocarbon Trnsp. Inc.	—	35,402	35,402	39,515	9,579	130,040	2,598	—	—	1,510	1,510

The P&GJ 500 ... dimensions of the pipeline energy business

Rank 82	Rank 83	Name of Company	Delivered out of system in 1982 Bbl (000) Crude oil	Products	Total	1982 Financial Oper Rev $000	Net Income $000	Property Value $000 12-31-82	Changes in Prop Val $000	Gath Lines	Miles of Lines Owned/Operated Crude Trunk	Products Trunk	Total
47	56	Dixie Pipeline Co.	—	34,008	34,008	29,993	6,109	71,856	52	—	—	1,303	1,303
57	57	Butte Pipeline Co.	33,058	—	33,058	9,227	2,239	17,708	—	—	373	—	373
59	58	Laurel Pipe Line Co.	—	32,634	32,634	13,397	2,472	57,432	1,512	—	—	453	453
62	59	Jayhawk Pipeline Corp.	31,314	—	31,314	6,329	1,036	21,065	139	233	513	—	746
49	60	Osage Pipe Line Co.	30,616	—	30,616	6,349	1,491	19,594	3	—	136	—	136
53	61	Hess Pipeline Co.	29,449	—	29,449	9,314	1,275	50,850	734	427	—	—	427
61	62	Belle Fourche Pipeline Co.	28,888	—	28,888	14,975	4,432	47,534	2,509	998	729	—	1,727
63	63	Cochine Pipeline System	—	26,656	26,565	72,380	44,401	240,754	155	—	—	1,200	1,200
69	64	Getty Pipeline Inc.	11,540	13,231	24,771	2,668	2,471	10,941	3,100	—	55	489	544
67	65	Mobil Alaska Pipeline Co.	24,074	—	24,074	152,021	62,518	394,120	1,713	—	818	—	818
76	66	Portal Pipe Line Co.	23,707	—	23,707	18,192	7,298	31,643	—	260	551	—	811
55	67	Oiltanking of Texas Pipeline Co.	22,317	—	22,317	1,862	815	11,300	40	—	19	—	19
68	68	Calnev Pipe Line Co.	—	21,715	21,715	12,103	7,540	33,810	4,470	—		566	566
82	69	Paloma Pipe Line Co.[A]	21,635	—	21,635	2,265	747	5,797	—	—	112	—	112
64	70	Cook Inlet Pipe Line Co.	20,611	—	20,611	18,493	3,529	42,344	34	—	55	—	55
73	71	Yellowstone Pipeline Co.	—	19,667	19,667	10,111	2,729	28,159	268	—	—	749	749
75	72	Diamond Shamrock Corp.	—	19,104	19,104	16,652	4,748	32,289	182	—	—	622	622
66	73	Farmland Industries Inc.[B]	19,066	—	19,066	2,402	738	10,509	163	654	242	—	896
77	74	Kaw Pipe Line Co.	18,457	—	18,457	4,921	821	11,843	106	1,399	—	—	1,399
56	75	Tecumseh Pipe Line Co.	18,155	—	18,155	1,550	179	15,274	26	—	206	—	206
71	76	Chase Pipe Line Co.	—	17,427	17,427	9,377	5,350	38,340	—	—	—	698	698
79	77	Wyco Pipe Line Co.	—	16,075	16,075	11,138	2,983	24,917	442	—	—	677	677
—	78	Seminole Pipeline Co.	—	15,930	15,930	10,538	(1997)	201,361	12,169	—	—	787	787
74	79	Ohio River Pipe Line Co.	—	14,651	14,651	4,254	1,637	21,677	24,630	—	—	400	400
70	80	Kenai Pipe Line Co.	14,340	—	14,340	3,275	777	12,358	87	—	23	—	23
78	81	American Petrofina Pipe Line	11,456	1,643	13,100	3,650	224	16,715	—	161	538	46	745
83	82	Okie Pipe Line Co.	7,805	4,883	12,687	5,816	1,893	14,424	474	498	—	409	907
87	83	Allegheny Pipeline Co	—	12,613	12,613	7,018	(147)	27,709	1,294	—	—	603	603
81	84	Acorn Pipeline Co.[A]	12,544	—	12,544	3,686	2,056	3,341	6	N/A	N/A	N/A	N/A
80	85	Gulf Central Pipeline Co.	—	12,426	12,426	23,520	6,659	121,222	246	—	—	1,912	1,912
86	86	Pioneer Pipeline Co.	—	12,402	12,402	4,812	1,377	12,327	508	—	—	301	301
85	87	Western Oil Trans. Co. Inc.	10,236	—	10,236	22,345	2,779	14,423	764	N/A	N/A	N/A	N/A
—	88	Tesoro Alaska Pipe Line Co.	—	10,010	10,010	6,887	2,414	22,333	—	—	—	70	70
—	89	Chisholm Pipeline	—	9,694	9,694	3,182	(1,428)	18,029	2,626	—	—	203	203
88	90	Jet Line Inc.	—	9,153	9,153	3,838	811	12,118	16	—	—	111	111
—	91	Cenex Pipeline Co.	—	9,353	9,353	—	—	—	—	—	—	423	423
84	92	Kiantone Pipeline Corp.	9,264	—	9,264	1,958	46	13,193	143	—	78	—	78
90	93	Trans-Ohio Pipeline Co.[C]	—	8,802	8,802	2,424	(367)	13,843	8	—	—	133	133
91	94	Amerada Hess Pipeline Corp.[D]	8,754	—	8,754	56,382	24,705	147,823	612	—	818	-	818
—	95	Midland-Lea Pipeline Co.	6,637	1,557	8,194	5,054	(853)	19,928	(1,299)	—	49	275	324
94	96	Phillips Alaska Pipeline Co.[D]	8,047	—	8,047	50,084	21,762	125,211	562	—	818	—	818
93	97	Union Alaska Pipe Line Co.[D]	7,917	—	7,917	48,082	18,333	124,921	551	—	818	—	818
92	98	TransMountain Oil Pipe Line Corp.	7,502	—	7,502	318	(74)	6,743	—	—	64	—	64
97	99	Mobil Eugene Island Pipeline Co.[A]	7,335	—	7,335	4,973	1,874	26,339	12,854	(181)	—	—	(181)
89	100	Interstate Energy Co.	—	6,949	6,949	10,049	—	55,184	44	—	—	94	94

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Arctic Energy/Pipeline Forecast

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COVER

Pipeline activity on the North Slope of Alaska revolves around new water-flood pipelines, production flow lines, gas lift lines, and other insulated piping essential to extending the life of the Prudhoe Bay Field.

—photo courtesy H.C. Price Construction Co.

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Arctic Energy Report

Arctic Prospects Strong; New Pipelines Depend On Market

by Dean Hale, *Editor*

Arctic energy continues to hold great promise for the future and both the U.S. and Canada see the region as an important source of oil and gas for the future. Oil from the North Slope—the 3-billionth barrel recently moved through the trans-Alaska oil pipeline—provides about 18% of U.S. production and about 11% of U.S. needs. Natural gas from the area abounds but is unable to reach the lower 48 market.

One of the reasons for the continuing optimism about the Arctic—an Exxon executive recently termed the Arctic "the future of the oil industry"—is that the oil and gas treasure estimated to be recoverable in this frigid, forebidding world is 30 to 55 billion bbl in Alaska and 20 to 25 billion in the Canadian Arctic. Gas reserves recoverable are estimated at 140 to 280 trillion cu ft in Alaska and 200 to 270 Tcf in the Canadian Arctic. (By contrast, in the Soviet Union's Arctic areas, 40 to 80 billion bbl of oil and 900 to 1100 Tcf of gas are estimated as recoverable).

The Arctic is a tough place to work, to explore, to build and operate pipelines. It is cold—temperature goes down to -60 F in deep winter and the wind blows hard—and it is dark—there are long periods of 24-hrs per day darkness.

Oil from the Arctic isn't—and won't be—cheap. Exploration, drilling, operating, and capital costs are estimated at $8 to $12 per bbl. Transportation costs of $4 to $12 per bbl to Canada or to the lower 48 mean that the basic cost, before royalties and taxes, ranges from $12 to $24 per bbl. Regardless, the price compares well with OPEC crude.

Gas Pipeline Developments

It might be 10 years before Alaska will reap major benefits from gas reserves at Prudhoe Bay. The General Accounting Office's recent study of the situation for Congress said that lack of a guaranteed market is a major obstacle in completing the remaining 745 miles in Alaska and 2136 miles in Canada of the 4800-mile gas pipeline delivery system.

The Alaska Highway Gas Pipeline Project first received approval from Congress and then President Carter in 1977. The U.S. was then in the throes of a major natural gas shortage. In the six-year period since, cost of the project escalated from $10 billion to $40 billion and a hugh surplus of gas deliverability has developed in the lower 48 states. This surplus, accompanied by a price crisis, probably means a longer than anticipated delay in marketability of the Alaskan gas.

But, GAO added, the alternatives of exporting the gas as LNG to Japan, or converting it to methanol and other petrochemicals, or using it for electric generation and heating in Alaska, are also unattractive and uneconomical.

To the producers at Prudhoe Bay, the natural gas is "a nuisance." About 1.71 billion cu ft per day of gas is produced—and 1.54 Bcf is reinjected into the oil reservoir. Eventually the process will reach 3 Bcf reinjection per day. The North Slope producers are concerned about the cost of such reinjection.

Insulated pipelines for gathering oil production, for waterflood injection water, for gaslift gas, and other requirements are integral part of Prudhoe Bay scene.

The consortium of companies, led by Northwest Alaskan Pipeline Co., who have spent more than $700 million designing the gas pipeline system through Alaska and Canada to the east and west U.S. markets, are also concerned. In May 1982, the consortium announced it was deferring action for at least two years. The organization put together by Northwest Alaskan has been reduced to a skeleton force that continues to do limited research in Alaska and some engineering studies and design work (by Fluor) in Irvine, Calif., plus work on the conditioning plant by Ralph M. Parsons Co. in Pasadena, Calif.

When will work resume on the pipeline? It is still contingent on the economy, improved demand for natural gas, and price, says a spokesman for Northwest Alaskan. There is a general agreement that completion of the line will not occur before 1989.

Meanwhile, FERC has approved a rule that permits shippers of gas through the gas line to recover conditioning and transportation expenses automatically. Without such a rule, says FERC, shippers would have to make a general rate filing every time rates were adjusted to reflect pipeline charges. The rule also permits automatic passthrough of the costs as well as gas purchase costs to consumers. Tariffs authorized by the rule are an exception to general FERC policy.

Almost $1 billion can be saved in cost of the natural gas conditioning plant at Prudhoe Bay—nearly 25% of the cost

Pipeline & Gas Journal

ARCTIC ENERGY/PIPELINES

September 1983

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Moving Arctic Energy To Market

Status of Projects and Proposals-September 1983

Type	Name	Size and Miles	Location	Status
Oil	Trans-Alaska Oil Pipeline	801 miles, 48-in.	Prudhoe Bay to Valdez	Completed and operating.
Oil	Interprovincial Pipe Line (NW) Ltd.	540 miles, 12-in.	Norman Wells, N.W.T., to Northern Alberta	Under construction.
Oil	Imperial Oil Co., Ltd.	500 miles 12 to 24-in.	Mackenzie Delta of Beaufort Sea to Norman Wells, NWT.	Proposed for 1990 operation.
Gas	ALASKA HIGHWAY GAS PIPELINE PROJECT			
	Northwest Alaskan Pipeline Co.	745 miles, 48-in.	Prudhoe Bay to Alaska-Canada (Yukon) border	Final application for construction certificate made to FERC; delayed two years.
	Foothills Pipe Lines (South Yukon) Ltd.	232 miles, 48-in. 276 miles, 56-in.	Southern Yukon	Expect Canadian federal approval when Alaskan section is approved.
	Foothills Pipe Lines (North B.C.) Ltd.	444 miles, 56-in.	Northern British Columbia	Expect Canadian federal approval when Alaskan section is approved.
	Foothills Pipe Lines (Alberta) Ltd.	394 miles, 56-in.	Alberta	Expect Canadian federal approval when Alaskan section is approved.
	Foothills Pipe Lines (Alberta) Ltd.	•187 miles, 36-in. •234 miles, 42-in.	Alberta	Prebuild section. Construction complete.
	Foothills Pipe Lines	o105 miles, 36-in.	Southeastern B.C.	Approved. Construction complete on 55 miles.
	Foothills Pipe Lines (Saskatchewan) Ltd.	•161 miles, 42-in.	Saskatchewan	Completed.
	Northern Border Pipeline Co.	•823 miles, 42-in.	Monchy, Sask. to Ventura, Iowa	Completed.
	Pacific Gas Transmission Co.	•160.5 miles, 42-in. in four loops.	Idaho, Washington, Oregon	Construction completed.
	Pacific Gas Transmission Co. and Pacific Gas & Electric Co.	721 miles, 42-in.		Awaiting FERC approval.
	Northwest Pipeline Co.	•100 miles, 30-in. •251 miles, 24-in.	Oregon, Idaho	Loop on existing system; construction completed.
	Foothills Pipe Lines	740 miles, 34-in.	Near Whitehorse to Mackenzie Delta area	Proposed; estimated cost $2.5 billion (as of June, 1979).
Gas	POLAR GAS PROJECT	1300 miles, 36-in.	High Arctic Islands and Mackenzie Delta to southern Canada	Project plans to file new application with National Energy Board
Gas	CANADIAN WESTERN LNG PROJECT			
	Dome Petroleum, Ltd.	375 miles, 24-in.	Compressor station No. 3 at McLeod Lake, B.C. on Westcoast Trans. Co. line to Grassy Point, Port Simpson Bay, B.C.	Needs NEB approval; will supply gas to LNG plant.

• *Completed project* o *Partially completed project*

of the multi-billion-dollar facility. Actual savings, considering inflation and financing costs, will be much higher, said John G. McMillan, chairman and CEO of Northwest Alaskan. Adoption of a new process (the BASF activated MDEA process) will also result in significant savings in operating costs and reduced space requirements at Prudhoe Bay.

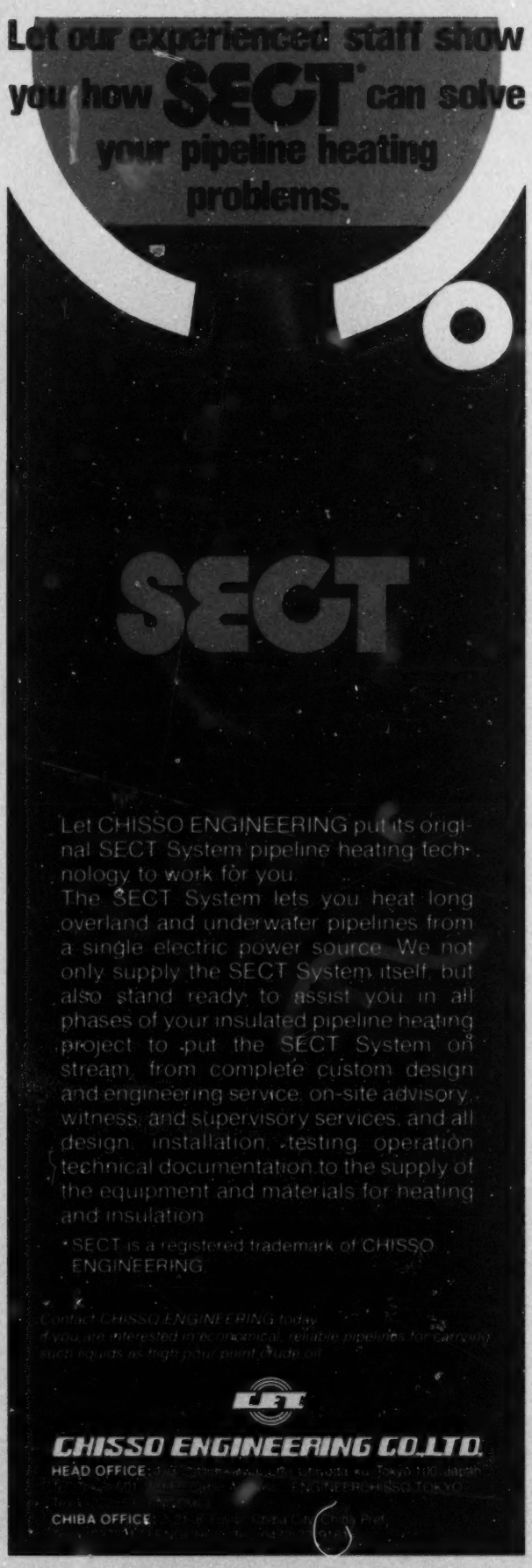
The Canadian government has given final approval to routing of the Alaskan Highway gas pipeline across the Yukon to British Columbia, lifting a five-year freeze on the proposed route. The Canadian Federal Northern Pipeline Agency plans to continue monitoring the delay in construction of the pipeline and retain its technical staff even though the line construction is deferred.

Foothills Pipe Lines (Yukon) Ltd., which will build and operate the Canadian section of the 48 and 56-in. line, is continuing design and planning for the 1352 miles that will be needed in Northern Alberta, British Columbia, and Yukon Territory. Phase II work will also include 234 miles of expansion to the Phase I (prebuild) facilities. The Dempster Lateral (740 miles) will take place later.

Trans-Alaska Oil Pipeline

On July 21, 1983, at 9:26 a.m., after a 5-day, 10-hour trip from Prudhoe Bay, the three billionth barrel of crude oil arrived at the Valdez marine terminal. Currently, pipeline throughput is 1.6 million bbl per day, with 1.5 million bbl daily from Prudhoe Bay Field and 100,000 bbl daily from Kuaparuk Field. The first barrel of North Slope oil was shipped Aug. 1, 1977 from Valdez. Since then, over 3700 tankers have been loaded with North Slope oil at the terminal. Oil through the pipeline provides about 18% of total U.S. production and about 11% of domestic consumption.

Contract for management services on the pipeline has been awarded to Grandmet Ahtna, a joint venture, by Alyeska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Pipeline Services Co., operator of the line. Grandmet Ahtna is a joint venture company formed by Grandmet International Services, Ltd. of London and Ahtna, a native Alaskan company owned by Athabascan Indian people. Contract covers catering, housekeeping and janitorial services at nine permanent and five seasonal pump stations on the line.

North Slope Activities

Over 130,000 ton of cargo, most of it equipment for the Prudhoe Bay waterflood project, arrived at the North Slope by barge in late August. Included was a 600-ft long, 10-story high, 30,000-ton, barge-mounted sea water treatment plant built in Korea. The barge-plant will take water at the end of a 2½-mile causeway, heat the water to 40 F, filter it, deoxygenize it, and pump it through two insulated pipelines to onshore injection plants. The plant will handle up to 2 billion bbl of water per day.

The plant is the key to a $2 billion project to maintain production rates at 1.5 million bbl per day by Arco, Alaska, Inc. and Sohio Alaska Petroleum Co., operators of the Prudhoe Bay Field. Ultimate recovery is expected to be increased from 5.3 to 9.6 billion bbl.

Fluor Engineers Inc. has completed the first phase of work on the Sohio side of the field with water treatment and reinjection increased to 100,000 bbl per day at Gathering Center Two and 25,000 bbl at Gathering Center Three. Phase Two modules at GC 3 will increase injection there to 100,000 bbl per day. Phase Three modules will be installed at GC 1 and GC 2. Total project completion is set for mid-1984.

Sohio Construction Co. has awarded contract to Brown & Root to assist in construction management of new manifolding stations, waterflood systems, low pressure separation, piping interconnections, and modernizing of existing gathering stations. Work is to be completed by end of 1984.

Contract for construction of Kuaparuk Transportation Co's new pipeline from Kuparuk Field to Alyeska's Pump Station 1—27 miles of 24-in. plus 9 miles of 12 and 18-in. laterals—has been awarded to a joint venture of Arctic Slope Wright Schuchart/Gregory & Cook. The line, when completed and in operation in 1984, will replace a 16-in. line laid in 1981-82 (see P&GJ, September 1982, page 23).

Other Developments

Sohio Construction Co. has awarded contract to Ralph M. Parsons Co. for engineering design services for facilities for the Endicott Reservoir in Alaska's Beaufort Sea. Endicott is near the Sag River Delta, about 20 miles northeast of Prudhoe Bay. It is expected to produce about 100,000 bbl per day when in operation. An oil pipeline to Alyeska's Pump Station 1 is anticipated eventually.

Arco Alaska Inc. has begun the first waterflood project on the North Slope by injecting 22,000 bbl of water per day into wells at sites A and E in Kuparuk Field. Injection rate will be increased gradually to 50,000 bbl per day. Project will allow recovery of another 800 to 900 million bbl of oil.

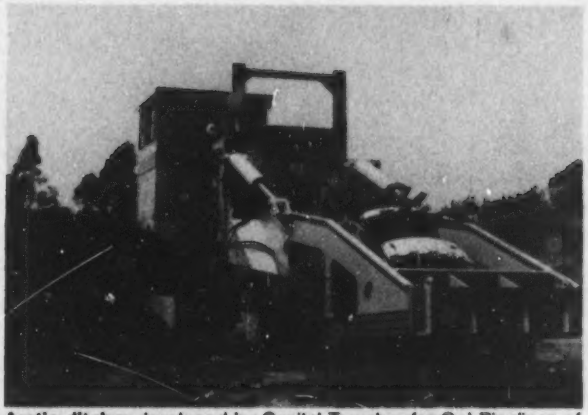
Sohio expects to find additional reserves in the Mukluk area of the Beaufort Sea northwest of Prudhoe Bay. A $67 million gravel island is to be built and a wildcat drilled in November, followed by a second well in January 1984. Sohio expects to find a field one-third to one-half the size of Prudhoe Bay Field.

A gravel island drill site is being built also for Gulf Oil Corp. and Tenneco Inc. for a wildcat well in Cross Island area of the Beaufort Sea, on the northern edge of the federal and state tract area.

Prudhoe Bay producers are happy with the Supreme Court's recent ruling on the windfall profit tax on crude oil that exempts North Slope production because it is a harsh, remote environment with exceptionally high costs.

Polar Gas Project

After many years of research and evaluation of a great number of alternative approaches, has selected a multi-phase



Arctic ditcher developed by Capitol Trencher for O J Pipelines of Edmonton, Alberta for use in permafrost country is designed with special features for use in the Canadian Arctic. The 90-ton machine, equipped with a 750-hp Caterpillar diesel engine, can dig from 30 to 60-in. wide ditch at depth of 10-ft. Cold country features include hydraulic jacks and wheel to completely lift trencher off ground to allow tracks and hydraulic components to warm in cold starting conditions; supercharged hydraulic system with precharged pumps; cold resistant rubberized conveyor and pulley assemblies; special cold country seals in hydraulic rams, and a four-ton sliding counterweight to assist in raising the wheel out of ground. Unit is to get major test during 1983-84 winter construction season.

pipeline system as the most cost effective and practical means of connecting gas reserves in the Canadian Arctic to southern markets. First phase under new plan would be a gas line from the Mackenzie Delta to nearest point of interconnection with existing systems. Project would include about 1300 miles of 36-in gas pipeline.

Other phases would be extensions to additional Arctic production, plus possible looping of the system as delivery requirements expanded. Under the new plan, Polar Gas expects to begin work on its system by mid-1980's.

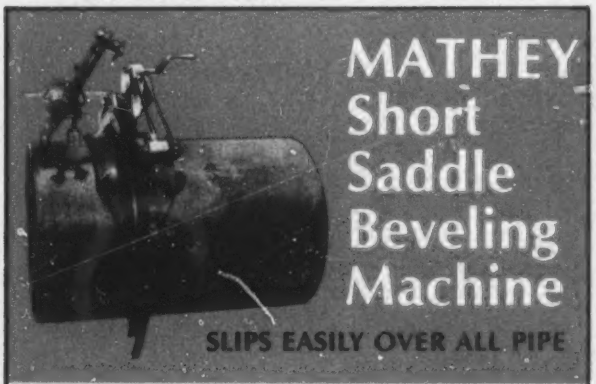
Beaufort Sea discoveries and ultimate production offshore Richards Island in the Mackenzie Delta are expected to require at least three interlinked subsea pipelines to handle oil, gas, and water between offshore production islands. If (and when) oil production becomes substantial, a 500-mile oil pipeline to Norman Wells from the Mackenzie Delta area would also be required. Prior to that time, tankers would carry production to markets. Imperial sees the pipeline being needed by 1990.

Canadian Arctic LNG

Dome Petroleum's Canadian Western LNG Project, planned for a location south of Grassy Point on Port Simpson Bay, B.C., is being designed to liquefy 408 MMcf per day of natural gas for export to Japan. Plant was announced for operation in 1986 for a 20-year period. Gas for the facility would be delivered through a new 375-mile, 24-in. pipeline originating at compressor station No. 3, at McLeod Lake, B.C., on the Westcoast Transmission Co., Ltd. pipeline. Gas produced in Alberta and British Columbia would be transported to the LNG plant.

Arctic Pilot Project's $C2.5 billion project involving construction of a gas pipeline on Melville Island in the Canadian Arctic, a barge-mounted liquefaction plant, and transportation of the LNG by ice-breaking tankers to Europe is in abeyance. Major obstacle has been obtaining contracts from purported European buyers. The lack of market has left the project in both regulatory and financial limbo.

In Canada's High Arctic, the search continues for oil and gas. Panarctic Oils, Ltd. now has 18 Tcf of gas reserves in the region and some significant oil finds. Charles R. Hetherington, president of Panarctic and a 40-year veteran of searching for Arctic energy, believes there is much oil and possibly 90 to 100 Tcf of gas to be found. **P&GJ**



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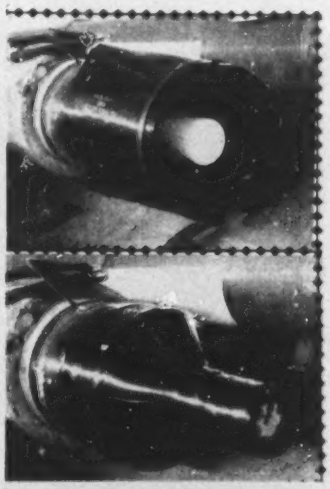

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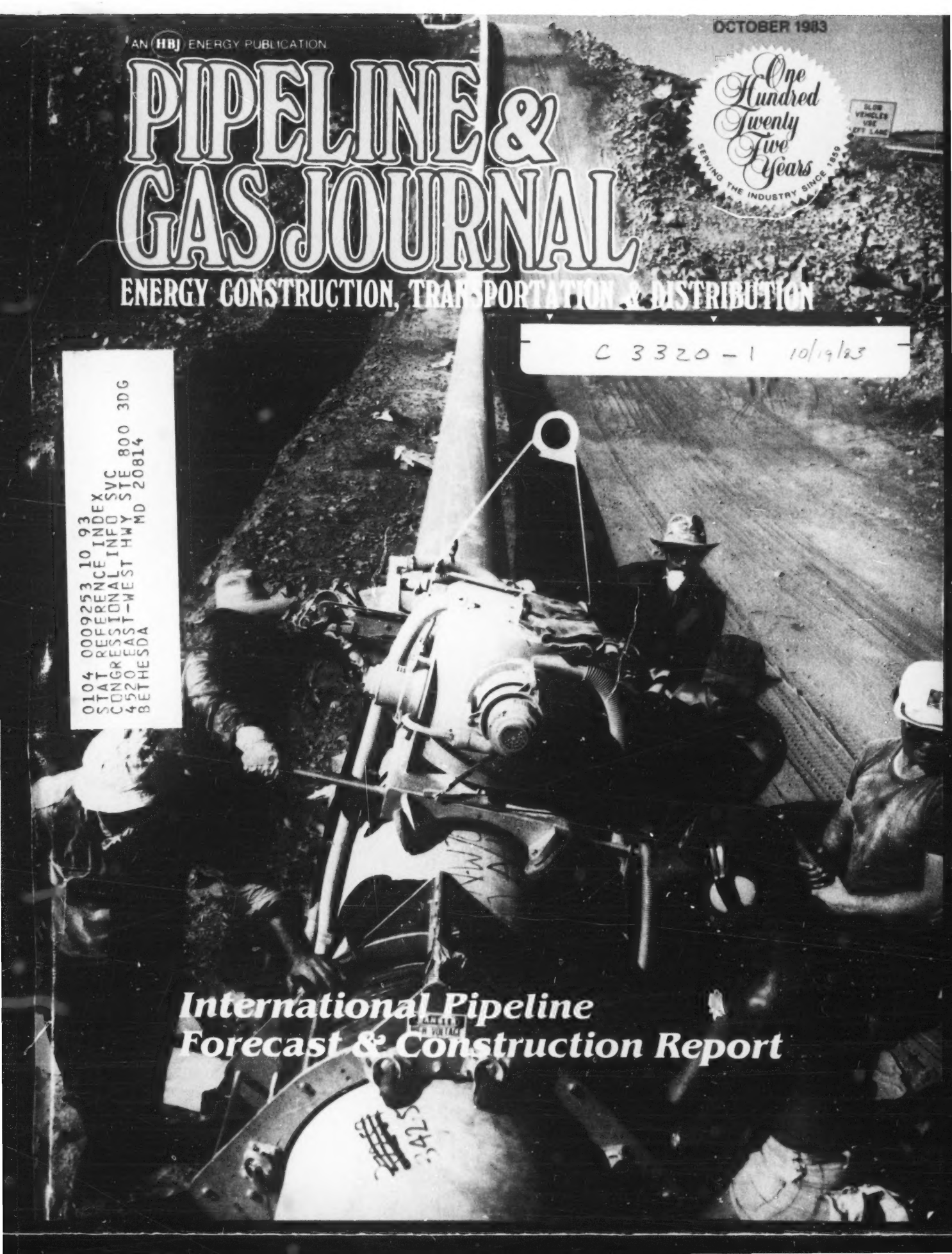


International Pipeline Forecast & Construction Report

International Pipeline Forecast

Pipe gang welds together new 938-mile Dampier-Perth gas pipeline in Western Australia; fusion-bonded epoxy-coated line, automatic welded, threads its way from Northwest Shelf coast through rocky country of remote western coastal region to serve developing industrial areas near Perth and Waggerup.

World's Planned, Underway Lines Total Over 109,000 Miles

by Dean Hale, *Editor*

Pipeline construction around the world (outside the United States) in 1984 will involve the installation of over 11,700 miles of natural gas, crude oil, refined products, natural gas liquids, and slurried solids pipelines, and require expenditures in excess of $7.3 billion.

Currently, there are 109,321 miles of pipelines planned or under construction over the globe. That includes 85,683 miles of planned or underway lines in the free world and 23,638 miles in the U.S.S.R., the eastern bloc countries, and China. Estimated cost of these lines, if built today, is $173.4 billion.

During 1983, an estimated 11,349 miles of pipelines will be installed around the world at a cost of over $6.5 billion. That's 16.5% fewer miles than in 1982, and the decline can be attributed to a slowdown in world economic conditions, a decrease in the demand for oil and gas all over the world, a continuing high cost for borrowed money, and inflationary pressures that have been reduced but not eliminated.

During 1984, according to results of *Pipeline & Gas Journal's* survey of world pipeline activity, the current construction activity rate will continue and most likely will show some increase.

The P&GJ Survey indicates that 1983 construction will include 7334 miles gas transmission mainlines, gathering lines, and field lines; 2070 miles crude trunk lines and crude gathering lines; 1523 miles of refined products and natural gas liquids/LPG lines; and 422 miles of offshore oil and gas lines.

Included in that total are many projects—a few large ones, many moderate-sized projects, and a lot of smaller undertakings. Included in the 1983 list are the first phases of the Norwegian Statpipe offshore gas system in the North Sea; the Dampier-Perth gas pipeline in western Australia; continuing construction of the Danish gas transmission pipeline system; extension of ENAGAS' gas system in Spain; construction of three major pipelines in Algeria; several major projects underway in Saudi Arabia; major pipeline construction in Pakistan and Bangladesh; and many other smaller but vital projects.

"Super projects" abound in pipeline planning; overall indications are that pipeline builders and planners and engineers will be busy to the end of the century.

Of the 98,282 miles of planned pipelines listed in the P&GJ survey, 64.4% are natural gas pipelines; 19.8% are crude oil pipelines; 9.8% are products and gas liquids pipelines; and 6.0% are slurried solids pipelines.

Analysis of the 11,039 miles of lines now under construction shows that 64.1% are natural gas lines; 20.1% are crude oil lines; 14.9% are products and gas liquids pipelines, and 0.9% are slurried solids lines.

INTERNATIONAL PIPELINE CONSTRUCTION

(As of October 1, 1983)

	Miles		
Type of Line	Total	Underway	Planned
Natural Gas	70,346	7,074	63,272
Crude Oil	21,663	2,217	19,466
Refined Products	11,220	1,648	9,572
Slurry	6,072	100	5,972
TOTALS	109,321	11,039	98,282

*Includes all free world (outside U.S.) plus Soviet Bloc and China

INTERNATIONAL PIPELINES PLANNED OR UNDER CONSTRUCTION

(as of October 1, 1983)

Area	Gas Pipelines			Crude Oil Pipelines			Products Pipelines			Slurry Pipelines			TOTALS		
	Planned	Underway	Total	Planned	Underway	Total	Planned	Underway	Total	Planned	Underway	Total	Planned	Underway	Total
Canada	13,301	268	13,569	823	587	1,410	593	92	685	500	—	500	15,217	947	16,164
Mexico, Central America & South Am.	10,840	422	11,262	3,428	68	3,496	2,007	315	2,322	243	100	343	16,518	905	17,423
Europe & N. Sea	14,820	1,209	16,029	738	32	770	627	107	734	—	—	—	16,185	1,348	17,533
Africa & Middle East	6,023	1,411	7,434	7,087	1,220	8,307	5,157	446	5,603	—	—	—	18,267	3,077	21,344
Southeast Asia, Japan Pacific	4,029	256	5,185	1,596	80	1,676	166	161	327	1,528	—	1,528	8,219	497	8,716
Australia & New Zealand	2,156	1,263	3,419	739	20	759	31	105	136	189	—	189	3,115	1,388	4,503
TOTALS	52,069	4,829	56,898	14,411	2,007	16,418	8,581	1,226	9,807	2,460	100	2,560	77,521	8,162	85,683
Other (USSR, Eastern Bloc, China)	11,203	2,245	13,448	5,055	210	5,265	991	422	1,413	3,512	—	2,912	20,761	2,877	23,638
WORLD TOTALS (miles)	63,272	7,074	70,346	19,466	2,217	21,683	9,572	1,648	11,220	5,972	100	6,072	98,282	11,039	109,321

Heading the list are Africa and the Middle East, with 21,344 miles total, of which 18,267 miles are planned; Europe and the North Sea ranks second, with 17,533 miles total, of which 16,185 miles are planned; in third spot is Mexico, Central America, and South America, with a total of 17,423 miles, of which 16,518 miles are planned; Canada follows in fourth place with 16,164 miles of total, of which 15,217 miles are planned; in fifth place is the Southeast Asia, Japan, Korea, and Pacific region, with a total of 8716 miles, of which 8219 are planned; Australia and New Zealand have a total of 4503 miles of pipelines, with 3115 miles planned.

Reported separately are the totals for the U.S.S.R., the eastern bloc countries, and China, with a total of 23,638 miles, of which 20,761 miles are planned.

Europe and North Sea

Again in 1983, most of the activity in this region centered on the North Sea, where a number of subsea oil and gas lines were completed and the big Statpipe system, to deliver gas from the Statfjord and Heimdal fields to Ekofisk, was begun. Statpipe, in mid-September, was two weeks ahead of schedule. The *LB 200* laybarge, working on the northern section, averaged 1½ miles per day and had completed the first crossing of the Norwegian Trench at a depth of 935 ft. Operations were suspended in early September and will be resumed on March 15, 1984. On the southern section, the 36-in. line from Ekofisk to Heimdal, the *ETPM 1601* completed over 160 miles before shutting down for the winter.

Statoil has also announced plans for "Gullpipe," a 124-mile, 36-in. oil line to carry crude from Gullfaks Field to Bergen, Norway, at a cost of $700 million.

Statoil will also build the 40-mile, 20-in. oil line from Ula Field to Ekofisk for BP Petroleum Development Ltd., Norway, and other interests; line will cost in excess of $112 million.

Shell is finalizing plans for the 180-mile, 20-in. gas line from the Fulmar Field to St. Fergus, along with new gas treating facilities at St. Fergus terminal.

Dansk Ollie & Naturgas of Denmark completed installation of its 138-mile, 20-in. oil line and a companion 170-mile, 30-in. gas pipeline from the Gorm and Tyra fields to Kaergaard, and is completing work on a 45-mile, 30-in. line from Kaergaard to Egtved and a 68-mile, 20-in. oil line from Kaergaard to Frederica. Work is also underway on 68 miles of 30-in. gas pipeline from Store Baelt to Dragor, near Copenhagen. Work is underway, too, on segments of the 7800 miles of laterals and gas distribution lines for Komgas, the association of the five regional gas systems in Denmark responsible for "piping" that country and serving gas customers.

The Trans-Scandinavian Gas Pipeline Project, a joint undertaking by Sweden's Vattenfall power agency, Swedegas, and Statoil, continues to study all aspects of 1100-mile, $2.9 billion pipeline, ranging from 30 to 36-in. size, to link Northern Norwegian gas discoveries through Sweden to Western Europe.

Sydgas, Sweden's regional gas utility, continues planning for construction of the 65-mile, 24-in. link from Denmark to Malmo, and the 185-mile, 24-in. trunk gas line from Malmo to Halsted. Negotiations for import of gas from Denmark have been underway for months. If Sweden does not exercise its option to buy 6 billion m^3 for 17 years, Denmark will reportedly consider an offer from West German's Ruhrgas to buy up to 7 billion m^3 over 20 years.

The huge Troll Field, biggest offshore gas field in the world according to experts, (its 75 Tcf is three times as large as Prudhoe Bay) will need a pipeline outlet in a few years. The field is northeast of Frigg and southeast of Statfjord in Norwegian waters. Indications are that the gas will go to continental Europe.

Statoil is also beginning planning for a 70-mile gas liquids line to link Heimdal to Brae Feild by late 1985.

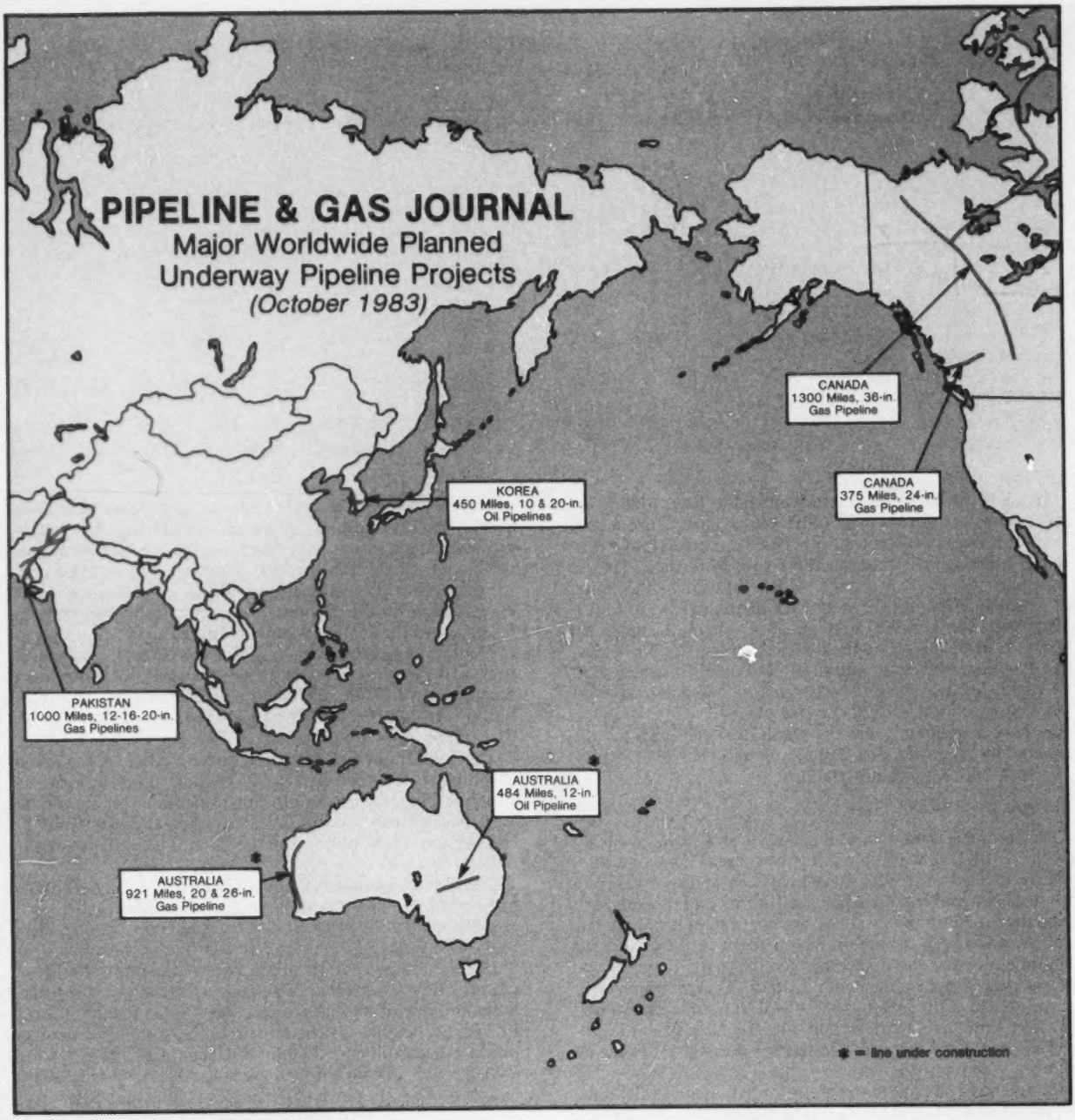
In the United Kingdom, British Gas has construction underway on 75 miles of 30 and 42-in. gas line in three projects. Shell's natural gas liquids line between St. Fergus and Moss moran will be completed this year—two sections, one of 56 miles and one of 44 miles—are underway on the 20-in. line. In Ireland, studies are underway on a 65-mile, 16-in. gas pipeline extension from Dublin to Ulster. Additional gas for Britain is now flowing through the $175 million, 49-mile, 20-in. Northern Leg gas pipeline between Magnus and Brent "A"

1983 International Pipeline Construction*

(Estimated Miles Completed During Year)

Gas Transmission	6212
Gas Field, Gathering	1122
TOTAL	**7334**
Crude Trunk Lines	1592
Crude Gathering	478
TOTAL	**2070**
Products Lines	1245
NGL/LPG Lines	278
TOTAL	**1523**
Offshore Oil Lines	104
Offshore Gas Lines	318
TOTAL	**422**
GRAND TOTAL	**11,349**

*Includes all free world (outside U.S.) plus Soviet Bloc and China



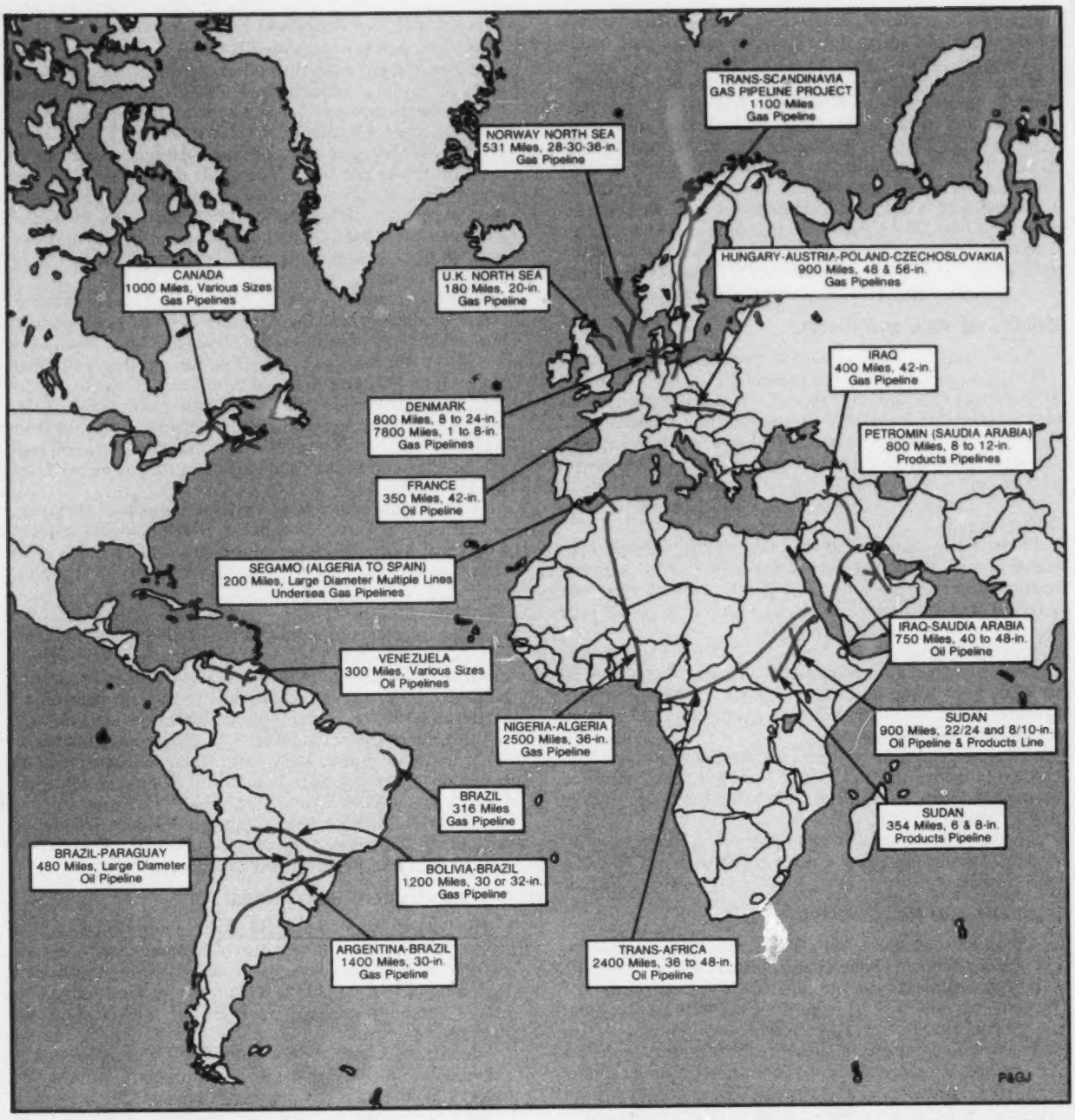
platform. Planning is also underway to bring gas ashore from the North Alwyn Field via a 68-mile, 24-in. line by 1987. Elsewhere, in the U.K. North Sea, the 57-mile Magnus-Ninian line went into operation in August.

On the continent, planning is underway on various projects, including 240 miles of 40 and 42-in. gas pipeline by OMV in Austria; 45 miles of 24-in. gas line is underway in France by Gaz de France; in Italy, 48 miles of 18-in. oil pipeline is being installed, and Italy's SNAM gas agency plans 185 miles of 10 and 20-in. gas pipeline for 1984 construction. Netherlands Gasunie plans to install 60 miles of gas pipeline, while offshore pipelines in the Netherlands include 124 miles of two-phase line being planned by NAM and Union; NAM also plans 46 miles of 24-in. offshore gas line and Mobil Netherlands plans 49 miles of 20-in. offshore gas line.

In Portugal, Petrosul is planning a 70-mile, 24-in. products line; in Spain, CAMPSA plans 89 miles of 10 to 14-in. products line from Huelva to El Arahal. Spain's ENAGAS has three major gas pipeline projects—53 miles of 20 and 26-in. from Zaragoza to Esquedas, 82 miles of 20-in. from El Serrablo gas field to Zaragoza, and 27 miles of 24-in. from El Orrio to Bilbao, now under construction. Catalana de Gas plans 271 miles of gas pipeline as part of the Spanish national gas grid to serve 150 small communities.

Pipeline activity on the continent has been materially affected by a decline in demand for petroleum products. Refinery utilization is down 7% to 62% of capacity and many refineries have been shut down, temporarily or permanently, mostly in Western Europe. Another major European concern is the development of a "unified" gas system to link and coordinate gas supplies; gas supply sources now include the North Sea, Algeria (both by pipeline and by LNG shipments), the U.S.S.R., and local production. The International Energy Agency has recommended that a "fail safe" system be developed.

Future developments are expected to give greater consideration to additional gas supplies from Africa by other underwater pipelines across the Mediterranean, such as the



SEGAMO project to bring gas from Algeria via a 200-mile undersea line (at depths to 2000 m or more) to Spain for delivery ultimately through Spain to France and other nations in the Common Market. Nigerian gas may also be delivered to Europe in this fashion through Morocco to Spain via lines across the Strait of Gibraltar.

Middle East and Africa

Contracts are expected to be awarded by the end of 1983 for construction of the 1800 miles of crude oil and products pipelines in Sudan for White Nile Petroleum Co., a partnership of the Sudanese government, Chevron Oil Co. of Sudan, International Finance Corp., and Arab Petroleum Investment Corp. Project includes 900 miles of 22 and 24-in. crude oil line to move crude from the Unity and Heglig Fields to Port Sudan, and 900 miles of 8 and 10-in. line to move products in the reverse direction. Sudan is also the site for 354 miles of 6 and 8-in. products pipeline that will extend deliveries from Haiya to Gedaref to Kassala. Port Sudan would be the originating terminal for a 2200-mile, 36 to 48-in. crude oil line proposed by Trans-African Pipeline, Inc. that would terminate at Douala, Cameroons on the Atlantic Ocean. Such a line would greatly decrease transit time and cost for Middle East petroleum moving to Europe, North America, and South America.

Pipeline activity in Egypt continues at a good pace with 63 miles of 8 to 36 gathering lines planned, along with 200 miles of 24-in. gas line, for 1984; currently under construction are 61 miles of 16-in. gas line and 61 miles of parrallel 10 and 12-in. products line from Port Said to Abu Sultan.

Nigeria's big Escravos-Lagos gas project, involving 383 miles of 8 through 36-in. pipeline, is expected to get underway in late 1983 with contracts awarded on Phase I—83 miles of 8 to 30-in.

Algeria has 898 miles of pipelines under construction—264 miles of 48-in. and 315 miles of 42-in. gas line, plus 319 miles of 24-in. LPG line—and 465 miles planned, including 390 miles of 30-in. crude line. In Libya, work continues on 354

miles of 42-in. while in Tunisia, the state gas and electric agency in planning 248 miles of 8 and 10-in. natural gas liquids pipeline for 1984.

Financing is being arranged for a 280-mile, 24-in. crude line from Yumurtalik to Kirrikkale (near Ankara) with construction possible in late 1984. In Sharjah, a $300 million gas pipeline project is being planned to prevent flaring of gas. In Oman, 132 miles of 12-in. gas pipeline are planned for 1984. In Saudi Arabia, Aramco has 150 miles of 48-in. gas pipeline underway and is planning 650 miles of 4 through 42-in. gas gathering lines, 250 miles of 20 and 40-in. gas transmission line, and 408 miles of 32 and 34-in. oil pipeline, with construction to begin in 1984. Aramco also has 147 miles of 16 through 48-in. offshore lines underway at the Marjan offshore field.

Southeast Asia and Pacific

Awards are expected for construction of Thailand's 27-mile, 24-in., $130 million, offshore gas line in the last quarter of 1983. India's first major offshore gas effort, now being planned, involved 146 miles of 36-in. from the South Bassein field to Umrat with and 11-mile lateral to Hagira. An 18 mile, 16-in. oil line from South Bassein field to Bombay Heights field will also be built. In Bangladesh, construction is nearing completion on 110 miles of 24-in. gas pipeline and 32 miles of 16 and 20-in. laterals.

Pakistan has been okayed for a major loan to install a national gas distribution grid involving some 430 miles of new transmission lines and connecting 75,000 new customers over a three-year period. Sui Gas has also completed its 215-mile Sui to Quetta gas line in Pakistan.

Indonesia reportedly is having a 2000-mile gas system studied, while Malaysia is planning 500 miles of gas lines, 30 to 36-in., from Trengganu field to Singapore; in Malaysia, work is also planned on 24 miles of 36-in. gas pipeline and 25 miles of 8-in. gas liquids line.

In Korea, planning continues on 450 miles of 10 and 20-in. crude oil pipeline while in Japan, work has been completed on the 35-mile products pipeline (aviation fuels) from Tokyo Bay to Narita Airport.

Slurry pipelines are also being planned in this region, including 619 miles in India, 450 miles in Thailand, and 188 miles in Australia.

Australia and New Zealand

Almost one-half of the A$1.2 billion, 926-mile, 20 and 26-in. gas pipeline between Dampier and Perth in Western Australia has been completed for the State Energy Commission of Western Australia. The 80-mile, 40-in. offshore gas line from the Northwest Shelf was completed and "plowed in" in January. Also completed is the Alice Springs to Palm Valley gas pipeline, 93 miles of 6 and 8-in. line, permitting production to begin at the Palm Valley gas field in central Australia's Amadeus Basin. In Queensland, work is underway from both ends on the 484-mile, 12-in. Jackson to Moonie oil pipeline; the $125 million project will tie into an existing Moonie-Brisbane oil line.

Contract has been let by Esso Australia for four offshore pipelines, each 10 miles and 10-in., two of them gas, two of them oil, connecting the Tuna and Flounder platforms in the Bass Strait and the Snapper and Marlin platforms in the same area. An ethane pipeline, 150 miles of 6 to 8-in., has been proposed beween Stony Point and Gillman (near Port Adelaide) by the Japanese firm Asahi. New local gas pipelines include 83 miles of 12-in. from Wagga Wagga to Albury and 56 miles of 6 and 8-in. from Young to Orange, Bathhurst, and Lithgow.

In New Zealand, the 99-mile RAP products pipeline from Marsden Point to Auckland (Wiri) has been completed, as has a 30-mile, 6-in. LPG line from Oanui to Pt. Taranak. Construction is nearing completion on the 100-mile gas pipeline between Palmerston and Hastings. A 30-mile LPG line from Christchurch to Lyttleton Harbour now being planned will include nearly one mile of pipe in a tunnel under a bay.

Mexico, Central America, South America

Mexico's pipeline plans for 1984 include 1925 miles of gas pipelines, and 685 miles of products pipelines. Currently, 101 miles of gas lines are underway. Costa Rico has two major trans-Isthmus pipelines being planned. One, by the government, involves 100 miles of 36-in. line between Puerto Moin and Puerto Mogos, to carry oil from west to east as a "short-cut" for Alaska and West Coast crude moving to Gulf Coast and eastern refineries; the other is a line planned for east to west movement of Venezuelan crude oil going to Japan. Panama, where the trans-Panamian oil line is now in operation, reportedly is studying an 80-mile methanol line along a parallel route.

Argentina reportedly has 200 miles of 30-in. under construction; Colombia is building 200 miles of 4 and 6-in. products line and 80 miles of 18-in. oil line; Bolivia plans to begin work in 1984 on 495 miles of 6 and 12-in. gas pipeline, and Brazil has 84 miles of gas pipeline and 62 miles of oil pipeline under construction. Brazil's "Nordestao" gas system on its northeastern coast, will involve a 254-mile main gas pipeline from Natal, in Rio Grande state, to Recife; 62 miles of lateral lines will also be built. Chile is studying plans for 563 miles of new gas lines.

Oil pipelines planned in South America include 1015 miles of new lines in Peru, 609 miles in Brazil, and 437 miles in Argentina. Major products lines planned include 538 miles in Bolivia, 625 miles in Colombia, and 454 miles in Argentina.

Canada

Biggest pipeline project in Canada in 1984 will be construction on the 537-mile 12-in. oil line from Norman Wells to Zama, with work beginning in January 1984 and continuing until about April 1. Remaining line to be built will resume in January 1985. Line can only be built in winter months.

Other major Canadian projects on the planning boards include Dome's 375-mile, 24-in. from Westcoast Transmission's main line to Port Simpson Bay, British Columbia, to supply gas to a planned LNG plant; Polar Gas Project's revised plan to build 1300 miles of 36-in. from the Beaufort Sea area to Alberta, and Esso Resources' plan to build 1200 miles of 36-in. oil line from the Beaufort Sea to northern Alberta.

U.S.S.R., Eastern Bloc, China

The Soviet Union completed construction—in one year—on its 2760-mile, 56-in. Urengoi to Uzhgorod, Czechoslovakia gas pipeline that will deliver gas to western Europe customers beginning January 1, 1984. While the pipeline is complete, testing continues as does work on the line's compressor stations.

In conjunction with the Soviet gas line, Czechoslovakia has embarked on a five-year construction program to build 537 miles of 56-in. transit gas line, and Poland will build 35 miles of 56-in. as the fourth transit gas pipeline to the Hungarian border.

Other Soviet pipeline activity includes a 1550-mile, 48-in. oil pipeline across the Urals from western Siberia to Perm, Gorki, Yaroslav and Moscow refinery sites, now under construction, along with the fourth 2480-mile, 56-in. Urengoi to western U.S.S.R. gas pipeline. Work is also underway on a 400-mile gas line on Sakhalin Island.

In China, work has begun on plans for two major coal slurry pipelines, each to carry 40 million tons per year. One project, 480 miles in length, will take coal from inner Mongolia to Qinhuangdau Port in Hebei province. The other, 600 miles long, will carry coal from Lu'an in Shanxi province to Nantong Port, Jiangsu province. China also has three 600-mile pipelines under construction—a gas line from Zhonyuan to Kaifeng fertilizer plant in Henan province; a gas line from Zhongyuan to Cangzhou fertilizer plant in Hebei province and Jilu chemical plant in Shandong province; and a 600-mile oil line from Zhongyuan to Henan oil refinery near Jiyuan.

P&GJ

Management Report

Gas Industry Executive Pay: Holding Companies Impact Big

by Dean Hale, *Editor*

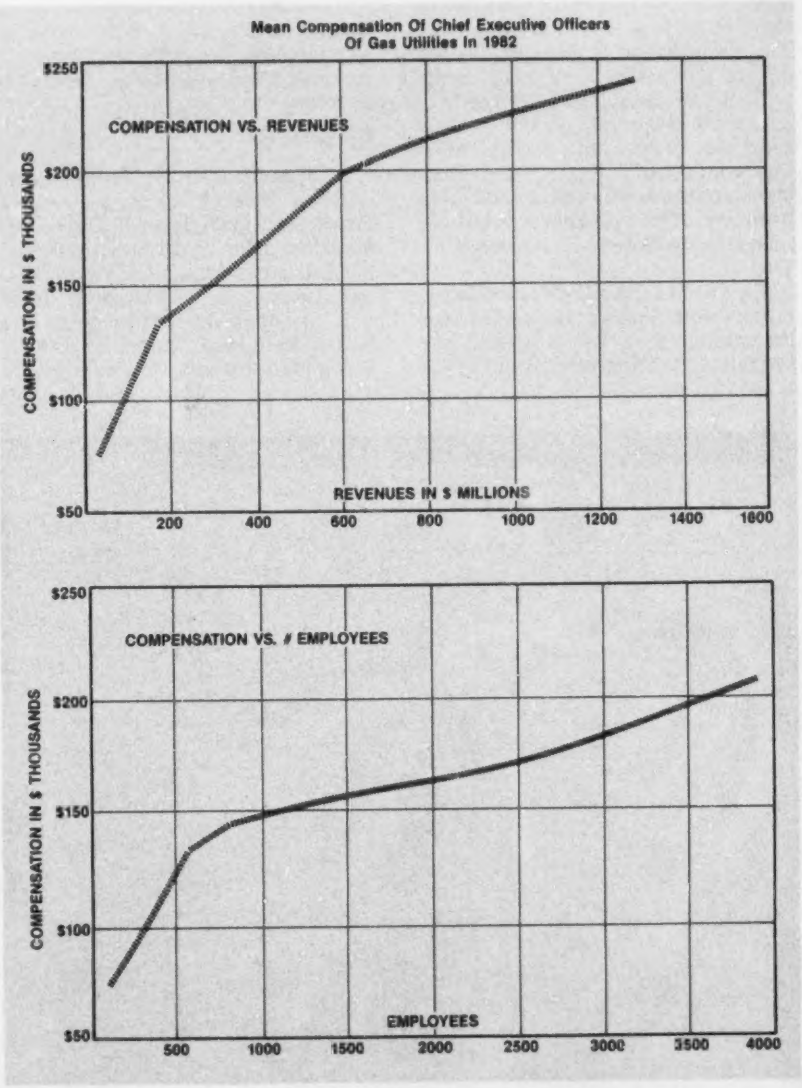
A newly published 1983 study of 1981 and 1982 gas distribution industry key executive compensation reveals that the movement of gas distribution companies toward establishment of holding companies—and their subsequent involvement in nonregulated businesses, is having a significant impact on executive compensation.

That is especially true with respect to compensation paid chief executive officers—and on employment of incentive compensation practices.

The four-part, 111-page analysis covers 68 investor owned gas distribution utilities, including 35 independent operating companies, three operating companies that are wholly-owned subsidiaries of utility holding companies, and 30 utility holding companies having gas distribution subsidiaries or companies with major gas distribution divisions.

Produced by Utilities Consulting Group of Washington, D.C., the report is based on reports submitted by the various companies themselves to the Securities & Exchange Commission, the Federal Energy Regulatory Commission, and to shareholders.

"Incentive compensaton for gas utility executives is far more extensive than for executives in electric utilities," notes David Marder, president of Utilities Consulting Group and author of the study. "Almost 41% of the gas distribution companies have incentive compensation programs—compared to less than 20% for electric utilities."



Key Officer Compensation

Mean gross compensation (reflecting all cash and cash-equivalent sums, whether paid out or deferred) of chief executive officers among gas distribution companies in their 1982 fiscal years was about $150,000 with mean company size of approximately $230 million in annual revenues. The gross compensation for CEOs in 1982 ranged from a low of about $62,000 to a high of $600,000. The average gas industry CEO received an increase in gross compensation in 1982 of just under 20% over his 1981 compensation.

Mean gross compensation paid to chief operating officers of gas utilities in 1982 was approximately $110,000, a sum that, on the average, was about 70% of the compensation paid CEOs. Chief operating officers' compensation in 1982 ranged from a low of $51,000 to a high of $270,000 and the average COO re-

MEAN COMPENSATION ACROSS THE GAS DISTRIBUTION INDUSTRY

Position/Responsibility	Mean 1982 Compensation	#Companies Surveyed	Mean Co. Size ($ mil.)
CEO	$150,000	60	$230
COO	110,000	31	260
Principal legal officer	98,000	15	488
Principal financial officer	87,000	34	310
Principal operations officer	87,000	33	315
Principal cust. serv. officer	78,000	10	336
Principal admin. officer	74,000	9	417

ceived an increase in compensation of 22% in 1982 over his 1981 figure.

For other principal financial, operations, customer services, and administrative officers, the range in mean gross compensation reported paid is in a narrow range—from $74,00 to $87,000. The percentage increase in 1982 gross compensation over 1981 averaged 15.6%, indicating a widening of the gross compensation gap between the two top positions and all others.

Seven officer positions or responsibilities and their compensations were reviewed for the report. They include:

Position/Responsibility	Applicable Titles
Chief Executive Officer	Chairman; President
Chief Operating Officer	President; Exec. VP; Sr. VP
Principal financial officer	Exec. VP., Sr. VP., and VP-Finance; Controller
Principal legal officer	VP-Law; VP-Legal Affairs; Chief Counsel
Principal operations officer	Sr. VP. and VP-Operations
Principal administrative officer	Sr. VP. and VP-Administration or General Services
Principal customer services officers	Sr. VP. and VP. Consumer Services, Consumer Affairs, Commercial Ac-Activities, Marketing Services, etc.

Not reflected in the study are perquisites or emoluments not reported by the companies themselves to constitute cash or cash equivalent disbursements (such as use of company-owned automobiles, club memberships, financial counseling, extra vacations, etc.) even though such perquisites may represent significant value to the recipients.

Incentive Compensation

Some form of incentive compensation plan was reported to exist by 27 companies, or almost 41% of the companies covered in the study. Of these:

- 16 have stock option plans; most were modified in 1981 so that awards are incentive stock options and qualify for tax benefits under recent legislation.
- 22 have annual cash payment plans; most of these companies report that their plans allow cash incentive payments up to 50% of an individuals salary.
- 7 have multi-year cash payment plans

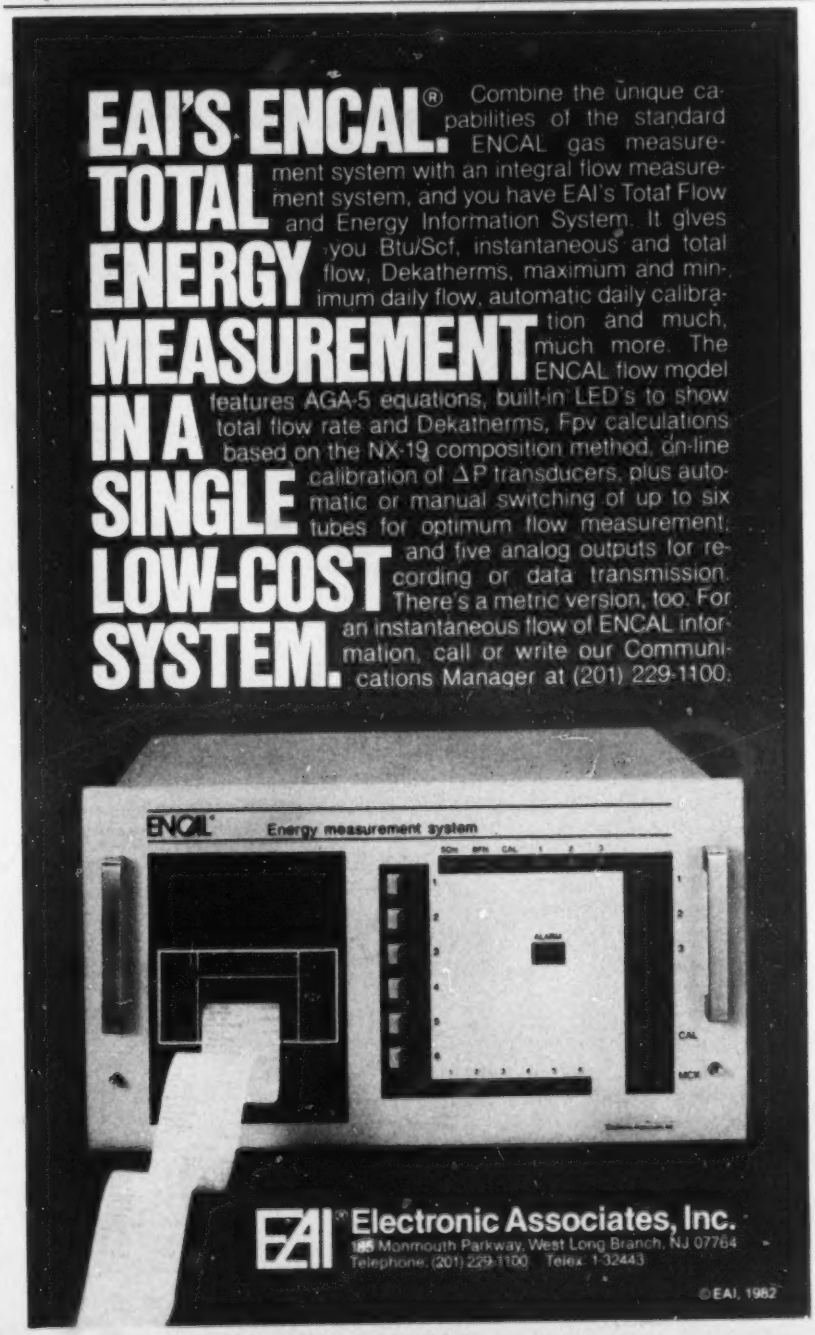
Among six companies where cash incentive awards were made in 1982, such awards represented an average of 21% of gross compensation of the five highest paid officers in each company.

The principal basis for awarding incentive payments were growth in earnings and in common stock prices.

Deferred Compensation

About one of every three companies reported either a deferred compensation plan or arrangements for deferred compensation with individual officers. In two-thirds of these companies, the plans relate to a reasonably wide number of key personnel.

Eight companies with incentive compensation plans allow deferral of such awards. In 11 companies, deferred compensation plans do not require actual executive contribution from received or credited income, but are 100% company contributions. Essentially all plans provide payout at retirement, whether normal or due to disability. Payout periods tend to be fixed at five or ten years.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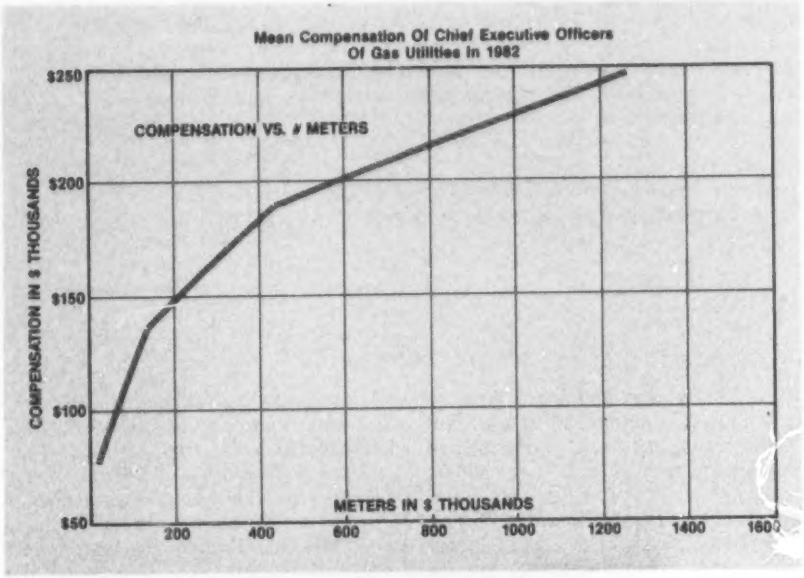
Retirement Compensation

In four out of five companies, retirement compensation programs for officers are the same as for all company employees.

Compensation used in pension formulas is most often the average base salary over a five-year period, most often (46.2% of the time) over the last 10 years prior to retirement.

Supplemental retirement income plans were reported by 12 companies. Such plans either tend to increase retirement compensation (as a percentage of average compensation upon which retirement pay is based) and/or to reduce the number of years of credited service an officer must have to qualify for maximum retirement benefits.

The average level for maximum annual retirement pay as a percentage of compensation received during working years was just over 56%, with an average of approximately 36 years of credited service necessary to achieve the maximum pension.



Directors' Compensation

Almost all of the companies (except subsidiaries) reported payment of annual (or monthly or quarterly) fees to outside directors. Excluding payments to outside chairmen, these payments ranged from $1000 to $18,000 with a mean of $6000. With a few exceptions, the size of the utility bore a reasonably direct relation to the amount of the fee paid.

Practically all companies reported paying board and committee meeting fees, normally drawing no distinction between the two. The mean fee was $400 per meeting, with almost 60% of the companies report fees in the $300 to $500 range.

One out of three gas companies allow directors to defer compensation. Four companies provide retirement pay for outside directors.

Inside directors (company officers) receive some fees for their services as directors in approximately one of every six companies.

The report, "Executive Compensation Among Gas Utilities," is available at a price of $645 from Utilities Consulting Group, 1730 M Street, NW, Washington, D.C. 20036.

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Improved refining, marketing operations boost earnings

The earnings picture brightened slightly during the second quarter of 1983, a welcome change for the oil industry after months of unprofitable reports.

Improved refined product margins, increased overseas oil and gas production, and an overall firming of prices are the primary reasons for the marked improvement.

The 94 oil companies responding to our survey report net income of $5.3 billion, a 9% increase over the same period in 1982. Profit margin for the group for the first and second quarters dropped to 3.6% from 3.8% last year.

Improved refining and marketing profit and reduced overhead expenses helped Exxon post a 26.6% earnings gain.

Atlantic Richfield's 4% drop in net income for the quarter was a result of a decrease in inventory profit, lower crude prices, and higher production and exploration expenses.

A 55% decline at Ashland Oil was blamed on lower profit margins from its largest business, oil refining and marketing, as well as continued impact of the recession on its chemicals, construction, and engineering and technology operations.

Getty Oil's earnings benefited from lower domestic and foreign exploratory costs, increased domestic crude-oil production, and higher earnings from insurance operations. Earnings for the quarter increased 4.5%.

Lower Mideast crude oil prices and improvements in refining and marketing operations world-wide combined for a 40% increase in net income at Mobil.

Phillips Petroleum reported 16% higher second quarter earnings, due primarily to higher natural gas liquids production, improved prices for natural gas and natural gas liquids, and increased crude oil production.

Standard Oil of California posted a 40% increase in net income, mainly as a result of firming of depressed petroleum product prices, the impact of reduced exploration expenses, and the acquisition of foreign crude oil on more competitive terms.

Standard Oil (Indiana) attributed 11.5% higher second quarter earnings to improved refined product margins and increased production of crude oil and natural gas overseas. Partially offsetting these gains were reduced market prices for crude oil and lower output of natural gas in the U.S.

Standard Oil (Ohio) reported slightly higher earnings, due to recovery of refining and marketing margins and increased volumes. The second quarter also benefited from anticipated first quarter sales of Alaskan crude oil which shifted into the second quarter because of delays in delivery.

Lower marketing and administrative expenses in Sun's U.S. refining and marketing operations resulted in a 23% earnings gain.

Tenneco reported slightly higher earnings even though its energy operations were hurt by a drop in

GAS COMPANIES' SECOND QUARTER FINANCIAL REPORTS

Company	Three months ending June 30 Revenues ($MIL)			Three months ending June 30 Earnings ($MIL)			Six months ending June 30 Revenues ($MIL)			Six months ending June 30 Earnings ($MIL)			Profit Margin	
	1983	1982	%CHG	1983	1982	%CHG	1983	1982	%CHG	1983	1982	%CHG	1983	1982
Alabama Tennessee N.G.	30.2	29.7	1.4	1.4	1.3	4.1	73.4	67.0	9.5	3.0	3.0	0.8	4.1	4.5
American Nat. Resources	744.5	683.4	8.9	31.4	33.2	-5.4	1727.0	1746.7	-1.1	92.3	94.5	-2.3	5.3	5.4
ARMA[1]	322.8	307.0	5.1	27.6	27.0	2.3	1324.1	1242.8	6.5	82.9	93.2	-11.1	6.3	7.5
Coastal Corp.	1382.6	1336.1	3.5	31.1	15.8	96.8	2942.9	2900.7	1.5	45.2	21.8	107.1	1.5	0.8
Columbia Gas	964.5	994.3	-3.0	25.7	38.8	-33.7	2721.0	2869.8	-5.2	92.3	131.1	-29.6	3.4	4.6
Consolidated Natural Gas	726.3	628.7	15.5	30.2	25.3	19.5	1943.4	1829.2	6.2	134.5	111.9	20.2	6.9	6.1
The El Paso Company	984.3	1051.7	-6.4	22.9	18.2	25.6	2207.1	2107.3	4.7	37.1	39.4	-5.7	1.7	1.9
ENSERCH	802.2	901.5	-11.0	9.8	36.1	-72.8	1793.8	1905.9	-5.9	49.0	93.3	-47.4	2.7	4.9
Equitable Gas	95.6	78.5	21.8	13.7	4.3	221.1	428.6	407.7	5.1	37.5	36.8	1.9	8.7	9.0
Houston Natural Gas[2]	696.7	785.2	-11.3	47.7	63.5	-24.9	2239.9	2452.4	-8.7	163.9	202.7	-19.1	7.3	8.3
InterNorth	1058.1	718.2	47.3	32.2	24.9	28.9	2417.9	2167.5	11.6	134.1	133.3	0.6	5.5	6.1
KN Energy[1]	107.2	95.7	11.9	4.6	3.0	51.9	494.9	484.6	2.1	27.5	27.8	-0.8	5.6	5.7
Mountain Fuel Supply[1]	362.0	299.7	20.8	41.5	34.3	21.1	616.0	516.9	19.2	55.6	42.7	30.3	9.0	8.3
National Fuel Gas[3]	211.8	184.7	14.7	5.4	-0.1		891.7	851.2	4.8	30.5	37.2	-18.0	3.4	4.4
Northwest Energy	459.6	297.1	54.7	-0.4	1.8		1263.1	784.0	61.1	32.2	32.9	-2.1	2.6	4.2
NOVA, An Alberta Corp.	922.4	858.1	7.5	36.5	31.0	17.7	1989.0	1588.0	25.3	69.1	58.4	18.3	3.5	3.7
ONEOK Inc.	254.4	252.5	0.7	9.3	10.8	-14.5	602.0	626.4	-3.9	20.7	33.8	-38.7	3.4	5.4
Pacific Lighting	1080.9	1006.7	7.4	41.7	32.5	28.3	2348.0	2181.2	7.6	74.2	61.2	21.1	3.2	2.8
Panhandle Eastern	732.8	792.4	-7.5	26.9	62.6	-57.0	1767.1	1749.1	1.0	88.5	136.0	-34.9	5.0	7.8
Peoples Energy	386.6	322.2	20.0	12.8	6.6	93.9	1316.5	1391.3	-5.4	51.3	58.2	-11.9	3.9	4.2
Pioneer Corp.	258.5	254.8	1.5	20.1	16.6	20.8	547.2	577.2	-5.2	41.6	46.5	-10.5	7.6	8.1
Sonat Inc.	580.7	611.4	-5.0	52.6	49.1	7.1	1426.9	1427.0	-0.0	118.2	112.3	5.2	8.3	7.9
Southern Union Co.	242.0	249.4	-3.0	2.8	1.2	128.7	587.7	593.9	-1.0	16.7	14.3	16.8	2.8	2.4
Texas Eastern Corp.	1254.7	1412.0	-11.1	31.0	42.8	-27.5	2714.1	2836.6	-4.3	68.5	104.7	-34.5	2.5	3.7
Texas Gas Resources	640.3	673.3	-4.9	4.8	28.4	-83.0	1431.9	1456.6	-1.7	29.8	58.2	-49.1	2.1	4.0
TransCanada Pipelines	715.8	794.6	-9.9	38.7	31.4	23.3	1639.3	1815.1	-9.7	85.1	70.1	21.4	5.2	3.9
Transco Energy Co.[1]	885.5	964.1	-8.1	24.9	41.8	-40.5	4040.7	3585.9	12.7	113.0	147.7	-23.5	2.8	4.1
Union Gas Ltd.	264.3	227.4	16.2	3.7	3.6	2.5	672.9	623.2	8.0	21.3	27.9	-23.8	3.2	4.5
United Energy Resources	872.7	1375.1	-36.5	12.3	54.2	-77.4	2132.5	2950.0	-27.7	51.9	118.4	-56.2	2.4	4.0
Westcoast Transmission	178.0	215.4	-17.4	15.9	18.2	-12.6	510.0	639.9	-20.3	33.1	37.7	-12.2	6.5	5.9
TOTAL	18217.9	18401.3	-1.0	658.7	758.2	-13.1	46810.4	46375.1	0.9	1900.7	2186.8	-13.1	4.1	4.7

[1]Twelve months [2]Nine months ending April 30 [3]Ends May 31

OIL COMPANIES' SECOND QUARTER FINANCIAL REPORTS

Company	Three months ending June 30 Revenues ($MIL) 1983	1982	%CHG	Earnings ($MIL) 1983	1982	%CHG	Six months ending June 30 Revenues ($MIL) 1983	1982	%CHG	Earnings ($MIL) 1983	1982	%CHG	Profit Margin 1983	1982
Adams Resources & Energy	53.2	59.1	-10.0	1.6	1.3	23.8	93.4	105.5	-11.5	4.4	0.4	1002.0	4.7	0.4
Adobe Oil & Gas	41.4	49.9	-16.9	5.4	5.8	-6.6	83.1	103.7	-19.9	11.1	11.7	-5.2	13.4	11.3
Amerada Hess	1905.7	1780.4	6.9	68.2	91.1	11.7	3768.0	4153.6	-9.8	73.2	64.9	63.0	2.0	1.1
American Petrofina	596.1	608.0	-2.3	8.6	10.9	-21.0	1018.4	1183.2	-13.9	8.9	28.9	-66.8	0.9	2.3
American Quasar	9.2	13.6	-32.5	-3.2	-0.9		20.7	28.6	-27.1	-3.7	1.5			5.1
Anglo Energy[1]	33.5	43.7	-23.4	-41.1	-1.6		116.7	154.6	-25.8	-42.5	0.9			0.3
Argo Petroleum	4.6	5.3	-9.6	-0.5	-0.8		10.1	11.0	-8.9	-1.3	-1.4			
Ashmore	97.8	109.8	-10.9	4.7	0.7	137.5	186.7	223.2	-16.4	-3.9				
Ashland Oil[1]	2035.5	2199.4	-7.5	31.0	69.1	-55.2	5886.7	6739.3	-13.1	45.6	105.0	-56.6	0.8	1.5
Atlantic Richfield	6604.3	6915.9	-4.5	393.6	409.8	-4.0	12968.7	13650.4	-5.0	723.7	795.2	-9.0	5.6	5.9
Beard Oil	7.0	9.7	-28.0	-0.8	0.2		15.4	18.8	-18.4	-1.1	0.6			3.4
Buttes Gas & Oil	31.9	29.6	7.7	0.3	-1.3		64.1	83.7	-23.4	1.4	0.7	87.3	2.2	0.9
Callon Petroleum[2]	22.9	16.7	37.3	0.3	2.1	-83.6								
Commonwealth Oil Refining	6.8	101.9	-93.3	-3.9	2.6		17.7	206.1	-93.3	-3.8	-15.3			
Consolidated O & G	9.2	10.0	-8.3	0.5	-0.1		18.2	21.6	-15.3	-0.7	-2.3			
Crown Central Petroleum	352.2	415.6	-15.3	3.6	-3.2		699.7	829.2	-15.6	-7.3	-4.6			
Crystal Oil	45.1	45.1		-0.9	-1.1		94.1	106.1	-11.3	-1.3	-1.9			
Damson Oil[1]	22.3	21.1	6.0	2.2	2.0	7.9	64.4	51.8	24.4	6.8	4.8	40.9	10.6	9.3
Diamond Shamrock	978.4	857.7	14.1	28.3	31.9	-17.7	1833.8	1668.8	11.2	30.9	61.1	-49.4	1.7	3.7
Dorchester Gas[3]	283.8	376.2	-24.6	3.2	4.3	-25.0	1110.4	805.5	37.8	11.6	13.8	-17.1	1.0	1.7
Dyco Petroleum	10.9	14.3	-23.3	1.9	3.9	-52.2	23.7	28.5	-17.1	4.2	7.8	-46.0	17.9	27.4
Energy Reserves Group	34.6	39.6	-12.5	2.9	-0.9		73.0	81.8	-10.7	6.4	-0.3		8.6	
Enstar Corp.	58.8	84.4	-30.3	2.0	9.0	-77.8	152.6	179.5	-15.0	13.2	19.1	-32.3	8.7	10.9
Equity Oil	5.3	5.7	-7.2	1.1	0.5	134.0	10.8	11.6	-7.4	2.2	1.7	31.0	20.6	14.5
Exeter Oil	1.1	1.1	0.4	0.2	0.2	-5.9	2.2	2.1	1.3	0.3	0.4	-17.5	13.7	16.8
Exxon	21881.0	25121.0	-8.9	1075.0	849.0	26.6	46580.0	51962.0	-10.3	2135.0	1688.0	26.5	4.6	3.2
Felmont	17.7	21.2	-16.3	2.5	4.3	-42.3	39.2	39.2	-0.1	6.7	7.1	-6.0	17.1	18.2
Forest Oil Corp.	29.5	36.8	-19.7	1.4	1.8	-24.6	66.4	75.9	-12.6	5.4	5.2	3.0	8.1	6.9
Freeport McMoRan	186.2	175.0	6.4	19.4	15.4	25.9	390.4	369.9	5.5	40.5	41.9	-3.4	10.4	11.3
Galaxy Oil	3.0	3.5	-13.9	-0.6	-0.6		6.3	6.9	-8.5	-1.0	-1.4			
Getty Oil	3006.6	3108.5	-3.3	163.7	156.6	4.5	6025.5	6269.2	-3.9	321.3	336.2	-4.4	5.3	5.4
Gulf Energy & Dev.	27.9	18.8	48.6	1.0	1.1	-3.6	58.0	34.2	69.6	2.3	1.5	52.7	3.9	4.4
Gulf Oil Corp.	6987.0	7416.0	-5.8	223.0	227.0	-1.8	13885.0	14951.0	-7.1	405.0	915.0	-21.4	2.9	3.4
Hadson Petroleum	7.2	8.8	-17.6	1.8	4.0	-54.6	11.9	19.3	-38.2	2.9	9.2	-68.9	24.0	47.7
Hadson Petroleum	7.2	8.8	-17.6	1.8	4.0	-54.6	11.9	19.3	-38.2	2.9	9.2	-68.9	24.0	47.7
Hamilton Bros. Petroleum	50.5	34.8	-12.4	7.3	-1.6		76.1	89.0	-14.5	10.9	4.3	151.7	14.4	4.9
Harken Oil & Gas	1.4	1.2	22.5	1.4	-0.5		2.9	2.6	10.5	1.3	-0.8		46.5	
Helmerich & Payne	51.8	89.0	-41.8	10.4	18.6	-43.8	104.7	179.5	-33.9	17.2	42.2	-40.1	20.2	22.2
Hershey Oil	1.8	1.8	-0.2	0.1	0.1	17.5	3.6	3.6	-0.2	0.4	0.4	19.9	11.7	9.7
Holly Corp[4]	113.1	107.2	5.5	2.0	1.4	40.4	239.0	238.4	0.3	5.0	7.2	-30.5	2.1	3.0
Howell Corp.	35.3	63.9	-47.9	0.3	0.8	-66.8	73.9	130.8	-43.5	0.4	1.6	-77.0	0.5	1.2
Howell Petroleum	15.7	20.9	-24.9	2.0	2.5	-19.1	38.0	43.7	-13.0	4.5	4.5	-0.5	11.8	10.3
Inexco Oil	43.4	55.7	-22.1	1.1	4.4	-29.9	86.0	118.5	-27.5	5.8	12.0	-51.9	6.7	10.1
K&M Petroleum	0.9	1.3	-29.9				2.0	2.7	-24.9		0.2			6.2
Lear Petroleum	55.1	48.2	14.2	4.0	0.5	712.7	109.2	102.9	6.1	8.7	-1.3	-783.0	7.9	-1.2
Louisiana Land & Exp.	311.0	310.4	0.2	24.3	20.4	19.0	564.3	614.7	-8.2	50.9	53.8	50.4	9.0	8.5
Mapco Inc.	507.9	481.8	5.4	11.0	17.9	-38.4	977.3	962.7	1.5	28.8	33.9	-38.4	2.1	3.5
May Petroleum	6.4	7.5	-15.2	-0.1	0.3		15.1	15.1	0.3	-1.7	1.0			6.5
Maynard Oil	8.6	8.1	-16.5	-1.4	-1.7		15.5	19.5	-20.4	-1.7	-0.6			
McFarland Energy	3.8	3.7	2.3	1.0	0.8	20.2	7.6	7.5	1.3	1.9	1.8	9.1	25.7	23.8
Mesa Petroleum	101.2	99.8	1.4	18.1	35.9	-49.7	207.9	204.0	1.9	38.8	69.1	-43.9	28.3	33.9
Mobil Corp.	14402.0	15790.0	-8.8	402.0	287.0	40.1	28690.0	32191.0	-10.9	652.0	531.0	22.8	2.3	1.6
Moran Energy	19.9	36.3	-18.3	0.8	1.8	-56.5	43.9	53.4	-17.8	2.2	5.9	-63.1	5.0	11.1
Murphy Oil	618.2	598.6	3.3	40.4	41.7	-3.2	1329.2	1342.9	-1.0	68.2	75.1	-9.1	5.1	5.6
Natomas	423.5	405.7	4.4	39.6	46.3	-14.6	776.1	795.3	-2.2	33.0	96.2	-65.7	4.3	12.1
Noble Affiliates	70.3	107.7	-34.7	5.9	20.2	-71.1	147.8	222.4	-33.5	12.9	42.7	-69.7	8.7	19.2
Norris Oil	0.7	0.7	10.1	0.1	0.1		1.4	1.3	8.0	0.1	0.1		6.9	7.5
Nugget Oil Corp.	9.7	7.0	38.3	6.8	0.5	740.9	0.6	3.7	-82.6	6.7	0.3	2027.6	1040.7	8.5
Oasco	11.0	8.9	23.8	2.2	1.7	23.5	22.6	16.4	38.4	4.2	3.4	22.1	18.5	21.0
Patrick Petroleum	14.4	24.8	-33.9	-2.0	-1.7		34.9	49.9	-30.0	-1.9	-1.7			
Peninsula Resources	2.3	3.6	-35.4	-2.0	-1.8		4.6	10.1	-54.7	4.0	2.4	67.8	86.9	23.5
Pennzoil Co.	567.4	588.7	-3.6	28.3	43.8	-35.3	1127.2	1175.9	-4.1	68.6	82.7	-17.0	6.1	7.0
Petroleum Devel.	4.0	4.0	-24.9	0.1	-0.1		8.3	6.3	33.5	0.4	-0.4		4.5	
Phillips Petroleum	3789.0	4028.0	-5.9	169.0	146.0	15.8	7626.0	7833.0	-2.6	298.0	338.0	-11.8	4.0	4.3
Prairie Producing Co.	4.8	6.4	-25.1	0.9	0.7	33.8	9.4	13.5	-30.6	1.5	2.1	-27.6	16.4	15.7
Quaker State	245.6	249.2	-1.5	17.1	16.0	-13.9	458.8	473.2	-3.0	18.2	19.8	-8.1	3.9	4.2
Sabine Corp.	25.6	48.7	-47.8	3.2	7.7	-58.6	50.2	96.5	-39.7	29.2	13.4	119.2	58.2	13.9
Seneca Oil	3.8	5.3	-29.1	2.0	1.3	58.9	8.9	10.8	-17.9	-3.3	-1.9			
Shell Oil	6872.0	5105.0	-4.6	390.0	380.0	2.6	9517.0	9947.0	-4.3	836.0	726.0	-12.2	6.7	7.3
Southland Royalty	79.8	92.9	-14.1	6.4	8.8	-27.2	162.2	187.7	-13.6	15.1	16.8	-9.9	9.3	8.9
Standard California	7092.0	9570.0	-24.3	368.0	263.0	39.9	14087.0	19381.0	-27.3	678.0	493.0	37.5	4.8	2.5
Standard Indiana	7422.0	7558.0	-1.8	626.0	382.0	11.5	14882.0	14723.0	1.1	825.0	852.0	-3.2	5.5	5.8
Standard Ohio	3101.0	3379.0	-8.2	479.0	673.0	0.6	5867.0	6998.0	-16.1	753.0	928.0	-18.9	12.8	13.3
Staten Petroleum[5]	3.5	3.7	-6.9	-0.7	0.8	-185.0	6.5	7.1	-8.8	-0.7	1.4			19.3
Summit Energy	1659.3	2152.2	-22.9	-155.3	-60.0		3689.7	6442.0	-16.9	-84.5	60.5			1.0
Sun Co.	3780.0	4160.0	-9.1	134.0	109.0	22.9	7520.0	8210.0	-8.4	223.0	232.0	-3.9	3.0	2.8
Superior Oil	418.6	505.9	-17.3	36.7	78.9	-52.2	874.1	1036.6	-15.5	60.4	160.3	-62.3	6.9	15.5
Tenneco	3566.0	3666.0	-2.3	189.3	188.5	0.4	7175.0	7452.0	-3.7	284.4	301.9	-5.8	4.0	4.1
Tenneco Petroleum[1]	712.2	556.3	28.0	10.6	15.7	-36.6	1429.8	1806.2	1.3	23.1	30.6	-24.6	1.3	1.7
Texaco Inc.	9000.0	11500.0	-13.9	327.0	305.0	7.2	20100.0	24500.0	-18.0	646.0	672.0	-3.9	3.2	2.7
Texas American Energy	43.3	45.1	-4.1	-1.2	-1.8		110.7	114.8	1.6	1.4	0.2	713.6	1.2	0.1
Texas International	41.3	43.7	-9.5	4.0	3.7	8.1	78.3	90.4	-15.6	4.2	7.0	-39.7	5.5	7.7
Tosco Corp.	748.5	827.2	-9.5	-194.5	106.7		1473.7	1650.2	-10.7	261.1	107.2	124.9	16.4	6.5
Total Petroleum N.A.	509.7	551.7	-7.6	-16.5	-5.4		1010.8	1096.1	-7.8	-53.6	0.8			0.1
Transcontinental Energy	6.2	13.7	-54.7	3.7	0.5	717.7	15.6	30.0	-48.2	7.4	0.7	926.3	47.9	2.4
Union California	2807.0	2909.7	-3.5	138.4	197.6	-29.5	5281.0	5391.3	-2.0	267.7	366.1	-26.9	5.1	6.8
Universal Resources	11.2	14.5	-22.8	-0.6	2.2	-128.4	23.8	31.6	-24.7	-1.3	5.2	-126.0	-5.3	16.6
Valanoco Oil	10.0	12.7	-21.3	0.1	-3.7		27.9	26.3	-12.9	1.2	-6.4		5.1	
Wichita Industries	2.1	2.9	-28.1	0.2	0.2	-6.1	4.2	5.0	-16.7	0.2	-0.2		5.8	
Wilshire Oil of Texas	2.2	3.3	-32.9	0.4	0.4	19.7	5.0	6.3	-20.6	1.2	0.6	83.9	23.5	10.2
Wiser Oil	11.6	12.0	-3.0	2.4	3.5	-32.6	25.8	25.8		6.3	7.1	-11.5	24.5	27.7
Woods Petroleum	16.7	20.8	-19.7	3.0	5.9	-49.2	35.2	41.2	-14.5	7.7	11.7	-33.9	21.9	28.3
Worldwide Energy	21.3	12.2	74.1	-2.8	-0.9	221.8	38.9	26.4	47.5	-1.4	-1.0	39.9	-3.6	-3.8
TOTAL	116753.1	127522.7	-8.6	4936.8	5053.3	-2.3	232024.6	258472.8	-10.2	9728.3	10091.7	-3.6	4.2	3.9

[1]Nine months. [2]Year ends May 31. [3]Ends May 31. [4]Ends Jan. 31. [5]Ends April 30. [6]Ends Sept. 30.

natural gas production, an industry wide surplus of gas, and a soft market.

Firming of spot market prices for crude oil and OPEC's establishment of production ceilings boosted Texaco's earnings 7% over the previous year.

Lower domestic natural gas production and prices and sagging earnings performances by its refining, marketing and chemical operations accounted for Union Oil of California's 30% drop in net income.

Adobe Oil & Gas posted a 6.6% drop in earnings due to a slowdown in exploration.

A decline in the volume of natural gas produced, reflecting curtailments by pipeline purchasers, was primarily responsible for American Petrofina's 21% decline in net income.

Anglo Energy reported a $41 million loss for the quarter as a result of disposition of various operating units in the Supply and Equipment Division and a write-down of oil and gas properties.

A decline in oil and gas sales as well as drilling and well servicing revenues adversely affected Beard Oil's second quarter results, posting a $1.1 million loss.

Crown Central Petroleum realized a net profit of $3.9 million compared to a net loss in 1982. Improvement was due mainly to increases in margins for refined products.

Economic pressures in the petroleum industry continued to hamper Crystal Oil's operations, resulting in a net loss for the quarter.

Enstar's 78% drop in earnings was due principally to curtailed liquefied natural gas production and lower oil and LNG prices in Indonesia.

A decline in natural gas production was blamed for Forest Oil's 25% decline in net income.

The decreased demand for natural gas also hindered Gulf Energy & Development's second quarter earnings which dropped 3.6%.

Howell Corp.'s 67% decline in net income resulted from continued weakness of conventional fuel product prices.

A decrease in dry holes and exploratory charges combined to produce a 19% increase in earnings at Louisiana Land & Exploration.

Mesa Petroleum reported net income of $15.1 million compared to $32.2 million last year.

Losses sustained by contract drilling operations were primiarly responsible for Moran Energy's 56% decrease in earnings.

Natomas said its 14.5% drop in net income was due to increased Indonesian finding and development costs, as well as lower petroleum prices and production.

Net earnings declined 71% at Noble Affiliates as a result of decreases recorded by three operating units: oil and gas, contract drilling, and trucking.

Sharply lower coal sales, reduced oil and gas sales, and a materials inventory write-down were major contributors to the loss reported by Patrick Petroleum.

Pennzoil said reduced natural gas sales and pipeline delays in calculating and paying amounts contractually owed because of reduced 1982 takes adversely affected second quarter earnings which dropped 35%.

Lower depreciation and amortization due to higher estimated recoverable reserves of oil and gas increased Prairie Producing's net income 34%.

Southland Royalty's earnings dropped 27% due to continued reduced demand for natural gas.

Superior Oil's second quarter earnings were hampered by lower domestic oil and gas prices and volumes, and dry hole costs significantly above those of last year. Net income fell 52%. *(Continued)*

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Tosco posted a net loss of $194.5 million for the quarter due to non-cash charges for revaluations of assets at the company's Duncan, Okla. and Bakersfield, Calif. refineries which are for sale.

Wainoco Oil turned a net loss in 1982 into a $101,000 gain in 1983 due to lower depreciation and depletion, reduced interest charges, and lower general and administrative costs.

The 30 gas companies responding to our survey reported a 10% decline in net income for the second quarter as a result of lower natural gas demand. Profit margin for the group remained unchanged from the 3.9% posted last year.

American Natural Resources said its 159% increase in earnings was achieved mainly by transporting additional gas for others, implementing operating efficiencies, and establishing lower prices for purchases of deregulated gas.

Coastal Corp. reported a 97% increase in net income reflecting increased margins in its refining and marketing segment and the addition of the Wyoming Interstate gas pipeline system.

Colder weather in the Consolidated Natural Gas operating area is the main reason for their 20% increase earnings.

The nationwide excess deliverability of natural gas continued to supress Enserch's natural gas sales and associated production of condensate and gas liquid, reducing income 73%.

KN Energy said higher rates helped offset the decline in gas sales on the interstate system, resulting in 52% increase in earnings.

Peoples Energy's net income for the quarter was aided by higher rates and colder weather. Earnings increased 21%.

The main reason for Pacific Lighting's improved results this quarter were improvements in utility and energy-related operations. Net income rose 28%.

Lower prices for North Sea crude oil and weak overall fuel demand stemming from a sluggish U.S. economy continued to adversely affect Texas Eastern's earnings, causing 28% decrease.

United Energy Resources' operations were adversely affected by the economy and the current excess deliverability of gas supply, as net income dropped 77%. ■

FINANCIAL NOTEBOOK

Capital appropriations by the petroleum industry in the second quarter fell 17.6% from the first quarter. Appropriations by non-petroleum firms increased 14.7% for the quarter, according to The Conference Board.

Capital spending by the industry was $5.2 billion, down 3.3% from the previous quarter. Spending prospects for 1983 continue to be weak, they report, with petroleum outlays expected to dip by 23%, compared to a 7% drop by non-industry manufacturers.

Cancellations and adjustments of previously approved appropriations amounted to $949 million in the second quarter, mostly in the petroleum industry.

Contracts. C F Braun was awarded a subcontract to design a process plant to produce liquefied petroleum gas at Tanjung Ugan, Indonesia by Nippon Steel. Toyo Menka Kaisha and Nippon Steel hold the prime contract with Pertamina, the Indonesian state oil company, and are responsible for procurement and construction.

Shell UK Exploration and Production awarded an offshore oilfield service contract to Gearhart Geodata Services (Aberdeen, Scotland). Contract involves the provision of high-technology "measurement while drilling" services by Gearhart to the majority of Shell's North Sea rigs and production platforms.

Total Oil Marine (France) awarded a $68 million contract to a joint venture Scottish shipyard to build a North Sea oil platform.

Zamel & Turbag/Brown & Root Al Khobar (Saudi Arabia) signed contracts with Aramco to provide construction management for various projects in the Eastern Province at Dhahran.

Texas International signed a contract with Celeron (Goodyear Tire & Rubber) for the transportation and sale of its Eloi Bay Field deep Miocene natural gas.

Ebasco Services (Enserch) was awarded a contract to provide construction and related services for an ongoing maintenance, repair, and modification program at Public Service of Colorado's Fort St. Vrain Nuclear Power Station.

Mergers/acquisitions. Mesa Petroleum agreed to sell its 3.98 million Superior Oil common shares back to Superior at $42/share.

Western Mining Corporation Holdings (Australia) will acquire all of the issued and outstanding shares of Mesa Australia for $35.4 million.

Under a previously announced merger agreement, Gulf Energy & Development became a unit of Penn Central.

Suburban Propane Gas entered into a definitive agreement with Proco Holding under which SPG will merge with a Proco unit.

Properties acquired. Apache Petroleum acquired an average 82% working interest in 34 production oil wells in the Riffe field in north central Kansas for $31.9 million. Interests were acquired from a group of companies including: C.C. & S. Oil Operations (Hayes, Kan.); Search Natural Resources (Denver, Colo.); Colorado Crude Explorations (Denver, Colo.); and Western Energy (Williston, N.D.).

Damson Oil acquired an overriding royalty interest in proved developed reserves estimated to yield 2.49 million bbl of oil from Antelope Co.

Joint ventures. Tenneco Oil Exploration and Production, Philadelphia Life Insurance (Tenneco), and Wilhelm Wilhemsen (Oslo, Norway) agreed to a joint venture under which about 20 vessels will be used to support Tenneco Oil's exploration and production activities in the Gulf.

Projects. Mark Producing announced the fabrication and installation of an 8-pile offshore platform for the drilling and producing of up to 24 oil/gas wells on South Marsh Island off the Louisiana coast.

Briefs. Frontier Pipeline is accepting tenders for shipment through its 290-mile crude petroleum pipeline in Utah and Wyoming.

Amoco Production plans an extensive in-fill drilling program to further develop its east and west Hackberry fields in Cameron Parish, La. ■